LEARNING STRATEGY PREFERENCES, DECISION-MAKING STYLES, WAYS OF KNOWING, AND CULTURAL AWARENESS OF MEMBERS OF THE NATIONAL ACADEMIC ADVISING ASSOCIATION

By

DONNA K. TROUT

Bachelors in Business Administration
Northeastern State University
Tahlequah, Oklahoma
1995

Master of Human Relations
The University of Oklahoma
Norman, Oklahoma
1998

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Thesis Approved:

Gary J. Conti
Thesis Advisor

Lynna J. Ausburn

Mary N. Kutz

Steven K. Marks

A. Gordon Emslie
Dean of the Graduate School

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CHAPTER 1

INTRODUCTION

"Academic advising encompasses an increasing level of presence and involvement in the development of college students and the educational paths they may choose" (Gillispie, 2003 p. 1). Although academic advising has been a defined area within education for only a few decades, it has been a prevalent concern since the birth of America.

Since the inception of higher education in America, the concept of advising students has been present in some form. The movement of advising throughout history offered practitioners valuable insight into theories and issues that continue to be a relevant concern to the academic world (Gillispie, 2003; Gordon, 1992). A theory that tends to surface time and time again is the role of an academic advisor. Are academic advisors counselors, career counselors, or teacher? "No one theory is likely to explain the whole of academic advising; just as not one theory could explain the whole of teaching, medicine, or law" (Hagen & Jordan, 2008, p. 18). Winston (2003) described counseling and academic advising together as:

> Interventions for helping students identify appropriate academic, life, and career goals, build or repair self-insight and self-esteem,

> broaden intellectual interest and curiosity, encourage the use of institutional resources and associated learning opportunities, establish meaningful interpersonal relationships with others, clarify personal values, examine ethical implications or their behavior and beliefs, and enhance critical thinking and reasoning. (p. 15)

Though Winston describes the two together, presently, academic advising and counseling are separate and different, and this study deals with the cognitive styles of the professional academic advisor.

Professional advisors, faculty advisors, and student advisors must "grasp their theoretical data in order to develop and continue the research necessary to generate newly and more effective ways of understanding and assisting future generations of learners" (Gillispie, 2003, p. 2). In this process, academic advisors are working with adult learners. Because, advisors help the learner address things related to cognitive processing, cognitive development theories are relevant to the field of academic advising. Based on the work of Piaget (1952), these theories "examine how people think, reason, and make meaning out of their experiences" (Evans, 2003, p. 186). Cognitive development is also viewed as "sequential and development occurs when cognitive structure is changed, thus enabling new ways of incorporating experience" (Creamer, 2000, p. 23). Although

cognitive structures vary from one individual to another, individuals may have different views of a single event (Creamer & Creamer, 1994). By addressing these cognitive processes, an advisor can help learners to make sound academic decisions to be successful in higher education academe.

Academic advisors work in the area of higher education, and higher education is a diverse area. It refers to post-secondary education that involves a variety of types of organizations such as community colleges, four-year universities, and proprietary schools.

Higher Education

As history shows, the American educational system is diverse and one of the most developed in the world. Different educational institutions are available within this system for a wide variety of learners. Among the post-secondary education options are the 4-year colleges and universities, 2-year community colleges, technical and trade schools, and proprietary colleges. Of these, the community college has been an original American contribution to higher education (Cohen & Brawer, 2003).

While many institutions typically provide students with specialized skills and technical knowledge needed for

employment, the community colleges refers to instructions "regionally accredited to award the associate in arts or the associate in science as its highest degree" (Cohen & Brawer, 2003, p. 379). In addition, community colleges upgrade skills for that person already in the workforce. "Associate's colleges constitute 42 percent of all accredited higher education institutions and served approximately 40 percent of all students enrolled in accredited, degree-granting higher education institutions in 1998" (Hurtado, 2003, p. 28).

The four-year universities and colleges are institutions of higher education that are usually comprises of a liberal arts and a science college. The difference between a university and a college is that a university is usually larger and offers advanced degrees in addition to undergraduate degrees (Thelin, 2003, p. 11). The universities typically enroll 21% of all students in higher education (Hurtado, 2003, p. 28). The baccalaureate colleges typically enroll 15% of the students in higher education (p. 28). While the community colleges offer associate degrees for the first 2 years of college, the universities and colleges offer all 4 years for a bachelor degree, and they may also offer masters degrees and doctorates.

There are American universities that are "Institute of Technology" that were established after World War I (Diener, 1986; Levine, 1986). These are generally research-intensive universities with a focus on engineering, science, and technology (Cohen & Brawer, 2003). These institutes are primarily at the community college level. However, many bachelor degree granting institutions will accept students' first two years from an Institute of Technology as transfer credit.

Proprietary (private) colleges have a long tradition in the United States. Dating from the time of the first colleges such as Harvard, "today these [proprietary colleges] out-number the public institutions by approximately 345 degree-granting institutions" (Hurtado, 2003, p. 40). More than half of the private institutions are affiliated with religious organizations (p. 40).

Various funding patterns exist for colleges and universities. The 2-year colleges are generally classified as public and independent while including both for-profit and nonprofit. Public colleges and universities are subsidized by the states in which they are located and are generally less expensive.

Independent colleges include church-related

institutions, private nonprofit institutions, and proprietary colleges and institutes of technology that are organized like business corporations (Cohen & Brawer, 2003, p. 106). Proprietary colleges do not receive tax subsides; in other words, they operate much like a business and are essentially tax-paying institutions (p. 40).

National Academic Advising Association

Although the concept of academic advising has a long history, the development of a professional academic advisor did not become a reality until the last 1970's with the introduction of the National Academic Advising Association (NACADA). The first statewide Academic Advising Conference was held on September 20, 1976, in Fresno, California (Beatty, 1991). Then in 1977 the first National Academic Advising Association conference was held in Burlington, Vermont (Beatty, 1991).

As of today, the National Association has more than 10,000 members. All 50 states, Puerto Rico, Canada, and several other countries are represented in NACADA. Attendance at NACADA's annual conferences are more than 2,000 a year (NACADA, 2009). NACADA has become a leader in the "development of professional and faculty advisors and administrators" (NACADA, Regions in Action, nd.). The vision

statement for the association is as follows:

> NACADA is the leader within the global education community for the theory, delivery, application and advancement of academic advising to enhance student learning and development. (NACADA, About NACADA n.d.)

Continuing Professional Education

NACADA is the primary professional development organization for academic advisors. Because it provides continuing education for its members, it is a quasi-educational organization (Darkenwald & Merriam, 1982, p. 166). Quasi-educational is an "occupational associations, which are voluntary membership organizations whose principal purpose is to advance the interests of a particular profession or occupational group" (p. 166).

Cyril O. Houle was the one who popularized the concept of Continuing Professional Education (Cervero, 1988). In his book on the topic, Learning in the Professions, Houle (1980) questioned the use of the word "education" with professional development and used the word "learning" in the title instead of "education."

> Chiefly because this primary emphasis is upon the actions of the individuals and groups who seek to fulfill their own potentialities. Learning is the process by which people gain knowledge, sensitiveness, or mastery of skills through experience or study. (preface, xi)

Continuing Professional Education (CPE)serves several functions. It:

> Focuses on programming for persons who have earned their professional qualifications in some field and who have subsequently sought additional educational experience to remind them of what they once knew and forgotten, to acquaint them with knowledge that has developed since they earned their qualification, and to help them solve personal and professional problems of various kinds. (Griffith, 1985, p. 102)

Consequently, Continuing Professional Education is the practice and study that is directed to the on-going learning needs of professionals (Cervero, 2001).

"CPE is part of the field of Adult Education which clarified its foundational base in the 1960's and early 1970's and which grounds itself in the works of Houle, Knowles, and Cervero" (Sleezer, Conti, & Nolan, 2004, pp. 23-24). "CPE is embedded in the field of Adult Education which relies heavily on Knowles' (1970) theory" (p. 25). Knowles contributed heavily to the field of Adult Education by developing two foundational theories of adult learning (Merriam, 2001, p. 3). These two "pillars of adult learning theory" (p. 3) are andragogy and self-directed learning.

Andragogy

Malcolm Knowles (1970) developed the modern concept of andragogy. Andragogy is "the art and science of helping

adults learn" (p. 38). Knowles' instructional model, which is based on assumptions about how adults learn, is a learner-centered approach for students of all ages. Andragogy assumes that adults are active learners involved in all steps of the learning process from selection of the learning topic to evaluation.

Knowles' concept of andragogy is based upon a set of assumption. Originally, Knowles proposed four assumptions, but then later added two more assumptions. Andragogy makes the following assumptions about the design of learning:

1. Adults need to know why they need to learn something before undertaking to learn it.
2. Adults have a self-concept of being responsible for their own lives.
3. Adults come into an educational activity with both a greater volume and a different quality of experience than youths.
4. Adults become ready to learn those things they need to know.
5. Adults are life centered (or task centered or problem centered) in their orientation learning.
6. While adults are responsive to some extrinsic motivators they tend to be intrinsic motivators. (Knowles, 1989, pp. 83-84)

In practical terms, andragogy means that instruction for adults needs to focus more on the process and less on the content being taught. Strategies such as case studies, role, playing, simulations, and self-evaluation are most useful for helping adults learn (Knowles, 1984).

Self-Directed Learning

Knowles (1975) provided the basic definition for self-directed learning. Self-directed learning is:

> A process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes. (p. 18)

Self-directed learning is a concept that learning can be constructed either in or out of the formal institutional environment.

Voluntary learning is a common activity for adults. Tough's (1971) research in the late 1960's and 1970's found that "highly deliberate efforts to learn take place all around you" (p. 3). Together these concepts of andragogy and self-directed learning lead to a focus on a learner-centered approach to education.

Individual Differences

"This learner-centered focus mandates that individual differences be identified" (McClellan & Conti, 2008, p. 14). Two ways of examining these individual differences in the field of Adult Education has been by addressing learning styles and learning strategies (Fellenz & Conti, 1989, pp.

6-9).

Learning styles are a complex manner in which learners efficiently perceive, process, store, and recall what they are attempting to learn (Merriam & Caffarella, 1999, p. 209). Learning styles are generally established and are steady throughout the learner's life (Fellenz & Conti, 1989, p. 8).

Learning strategies are "the techniques or skills that an individual elects to use in order to accomplish a learning task. They differ from learning style in that they are techniques rather than stable traits, and they are selected for a specific task" (Fellenz & Conti, 1989, pp. 7-8). Individuals use varying learning strategies to accomplish different tasks (p. 8). However, research has shown that adult learners fall into three broad learning strategy preference groups (Conti, 2009). These have been termed Navigators, Problem Solvers, and Engagers.

Navigators are "focused learners who chart a course for learning and follow it" (Conti, 2009, p. 893). Problem Solvers "generate alternatives to create additional learning options" (p. 894). Engagers "learn best when they are actively engaged in a meaningful manner with the learning task" (p. 894). "The key to learning is engagement - a

relationship between the learner, the task or subject matter, the environment, and the teacher" (Kidd, 1973, p. 266).

Learning strategy preferences are a cognitive process. Cognitive processing involves cognition and is "the study of how people receive, store, retrieve, transform, and transmit information" (Merriam & Caffarella, 1991, p. 159). Learning strategies focus on how people perceive elements in their learning environment and how they then select to go about a learning task (Fellenz & Conti, 1989, p. 7). These are related to how an adult goes about learning how to learn (Smith, 1982, p. 17).

Decision-Making Styles

Another cognitive process is decision-making. Decision-making is a very important human skill. Whether making a judgement or a choice, decision-making affects the quality of life's success on a personal level, organizational level, and educational level (Kearsley, n.d.).

It is theorized that people process, obtain, organize, and communicate learning and knowledge in different ways (Ryan & David, 2003, p. 693). One of those processes is decision making. Decision making is the type of cognitive

activity that is being engaged when a person encounters a situation where choice is made from a set of options. "Cognitive style is the manner in which individuals take in data from the outside world and make decisions based on the data" (Scott & Bruce, 1995, p. 819). When making decisions, people revert to habitual patterns, and these patterns are referred to as decision-making styles (p. 818). "Decision-making style is defined by the amount of information gathered and the number of alternatives considered when making a decision" (p. 819).

Harren (1979) argues that in decision making a person will have a preferred decision-making style. Unless the environment changes or interferes, a person will tend to use a primary style of decision making for each decision. Theory and empirical research suggest that an individual makes decisions from one of these five positions: (a) rational, (b) intuitive, (c) dependent, (d) avoidance, and (5) spontaneous (Scott & Bruce, 1995).

Decision-making styles play a role in academic advising because advisors "help students analyze their own strategies for making decisions and help them improve these strategies. They [advisors] can teach decision-making skills. They [advisors] can also help students take responsibilities for

the decisions they have made" (Gordon, 1992, p. 14).

Ways of Knowing

A cognitive style that relates to how people approach new knowledge is labeled ways of knowing. "Ways of knowing refers to the modes of thinking in which people construct or adopt one or more ways of obtaining, reflecting on, evaluating, and communicating knowledge" (Galotti, et al., 1999, p. 746). In ways of knowing, there are two distinct types of orientations to the ways of knowing; they have been labeled as separate and connected knowers (Clinchy, 1990).

Separate knowers distance themselves from the ideas of others and think critically. They prefer to challenge or debate things. Separate knowers are seen as critical thinkers (Galotti, 1998). This type of critical thinking is:

> Thinking that examines assumptions behind conclusions. It is rational--it is reasoning that is uncontaminated by emotions or personal feeling. It is rigorous--it seeks and finds the "holes" in an argument, the alterative explanations of a phenomenon, the contradictions of mission statement, the implications of a policy change. (p. 281)

Separate knowers take nothing at face value and take no assumption for granted (p. 282).

Connecting knowers are personal and collaborative. Connected knowers draw on personal experiences and

reactions. Connecting knowing is more prevalent among females (Galotti, 1998). The connected knower:

> Doesn't try to evaluate the perspective she is examining; she tries to understand it. She does not ask whether is it right; she asks what it means. When she says, Why do you think that? She doesn't mean, What evidence do you have to back that up? She means, What in your experience led you to that position? She is looking for the story behind the idea. The voice of separate knowing is argument; the voice of connected knowing is a narrative voice. (Clinchy, 1990, p. 64)

Where separate knowers take nothing at face value, connected knowers "in a sense takes everything at face value" (Galotti, 1998, p. 282).

Multicultural Awareness

Worldview is how someone see the culture of the world. Our cultural identity is understanding who we are and how someone else perceives us as a member of a particular cultural group (p. 6).

> Our cultural worldview and identity-which are inextricably intertwined-then, are not something we are born with, but rather are something that we have learned and that will continue to develop over the course of our lives. (Cunningham, 2007, p. 6)

Cultural identity has several components. These include "ethnicity, race, religion, gender identity, affective/ sexual orientation, personality type, age cohort, body image, learning style, educational attainment, job functions

and position, leadership style...and so on" (Cunningham, 2007, p. 10). With so many components of cultural identity, it is important that academic advisors have a multi-cultural awareness of their advisees.

It is essential that academic advisors be able to deal with this diversity resulting from the various cultural backgrounds of students with whom they advise. "Cultural competence is a set of academic and interpersonal skills that allow people to increase their understanding and appreciation of cultural differences and similarities within, among, and between groups" (U. S. Department of Health and Human Services, 1994, Chpt. 1). While people can learn to understand and appreciate different cultures, they must not allow these generalizations to cause them to stereotype or over-simplify their idea about others (Cunningham, 2007, p 2).

Problem

"There is a great deal of evidence to indicate that most professionals now embrace the seriousness of lifelong professional education" (Cervero, 1989, p. 514). This statement is powerful especially when it comes to professional academic advising. Although academic advising is typically not considered to be a profession, those

involved in it are referred to as professionals by students and administrators in higher education (Gillespie, 2005). Academic advisors are expected to conduct their work with a high degree of professionalism (Huggett, 2000, p. 46). To achieve these high expectations, academic advisors are constantly striving to improve their professional skills. This is especially so when it comes to student development (Frost, 1991, p. 18).

Advisors work with student development in a critical area that can affect a student's success. Academic advisors help students with the process of decision making, of making sense of their world, and of understanding how they go about learning. Before striving to help students in these areas, academic advisors should be aware of these cognitive processes and of cultural factors affecting their students. Through this metacognitive process, they cannot only understand themselves better as learners but can also gain an awareness of how these processes operate. Although there are important individual differences in these cognitive processes, there is currently no information about academic advisors' decision-making styles, ways of knowing, learning strategy preferences, or level of multicultural awareness.

Student development is an area that changes frequently.

Consequently, professional development activities are an on-going need. However, it is difficult to plan professional development activities for academic advisors related to the cognitive processes of decision making, ways of knowing, learning strategy preferences, and multicultural awareness without a current profile of academic advisors in these areas. Without such a profile, training programs will remain generic in nature instead of tailored specifically to the field of academic advisors, and no reference point will exist for individual academic advisors to relate their decision-making styles, ways of knowing, learning strategy preferences, and level of multicutural awareness to those of the overall field.

Purpose Statement

The purpose of this study was to describe the decision-making styles, ways of knowing, learning strategy preferences, and multicultural awareness levels of the members of the National Academic Advising Association (NACADA). This was done by surveying the members of NACADA related to their decision-making style by using the General Decision-Making Style (GDMS) survey. Their ways of knowing was measured with the Attitudes Toward Thinking and Learning (ATTLS) survey. Their learning strategy preference was

identified by using the Assessing The Learning Strategies of AdultS (ATLAS) instrument. Their multi-cultural awareness level was identified with the Cultural Appreciation in Lifelong Learning (CALL) instrument.

Research Questions

The Adult Education program at Oklahoma State University is conducting a programmatic line of inquiry related to cognitive styles. This study is part of this line of inquiry. In order for this study to be interpreted with the results of the other studies in this programmatic line of inquiry, the research questions used for this study were patterned after that of Sanders (2008). Sanders investigated the decision-making styles, learning strategy preferences, and ways of knowing for customers of the One-Stop Career Center in Tulsa, Oklahoma. The following research question guided this study.

1. What is the decision-making profile of the participants using the General Decision-Making Style (GDMS) survey?
2. What is the learning ways of knowing profile of participants using the Attitudes Toward Thinking and Learning Survey(ATTLS)?
3. What is the learning strategy preference profile of participants using the Assessing The Learning Strategies of Adults (ATLAS)?
4. What is the multicultural awareness profile of the participants using the Cultural Appreciation in Lifelong Learning (CALL)?
5. What is the relationship of the participants'

decision-making style to the demographic variables of age, gender, level of education, ethnic background, type of institution employed, level of advisement, years of advisement, and type of advisor?

6. What is the relationship of the participants' ways of knowing to the demographic variables of age, gender, level of education, ethnic background, type of institution employed, level of advisement, years of advisement, and type of advisor?
7. What is the relationship of the participants' learning strategy preferences to the demographic variables of age, gender, level of education, ethnic background, type of institution employed, level of advisement, years of advisement, and type of advisor?
8. What is the relationship of the participants' multicutural awareness level to the demographic variables of age, gender, level of education, ethnic background, type of institution employed, level of advisement, years of advisement, and type of advisor?
9. What is the interaction among participants' decision-making style, ways of knowing preference, learning strategy preference, and cultural appreciation levels.

Data were gathered to answer these research questions from the following sources and were analyzed with the following procedures:

Question	Data Source	Procedure
1. Decision-making style profile	GDMS	Frequency distributions, factor analysis, and Cronbach's alpha
2. Ways of knowing profile	ATTLS	Frequency distributions, factor analysis, and Cronbach's alpha
3. Learning strategy preference profile	ATLAS	Frequency distributions and chi square
4. Multicutural awareness preference profile	CALL	Frequency distributions and chi square
5. Relationships of decision-making styles, and demographic variables.	GDMS and demographic survey	ANOVA
6. Relationships of ways, and demographic variables.	ATTLS and demographic survey	ANOVA
7. Relationships of learning strategy preferences, and demographic variables.	ATLAS and demographic survey	Chi square
8. Relationships of multicultural awareness preferences, and demographic variables.	CALL and demographic survey	Chi square
9. Interaction of decision-making style, ways of knowing, learning strategy preferences, and cultural appreciation levels	GDMS, ATTLS, ATLAS, and CALL	Discriminant analysis

Conceptual Framework

Although the central question of how adults learn has been the focus of attention for adult educators since the development of the professional field of practice in the 1920s and although no single model has emerged to explain how adults learn, the two structural pillars for the field have been the theories of andragogy and self-directed learning (Merriam, 2001, p. 3). These two foundational theories "describe adult learning as a learner-centered activity. This focus mandates that individual differences be identified" (McClellan & Conti, 2008, p. 14).

The quest for understanding individual differences has a long history in the study of learning and in education. These efforts are associated with the concept of "style" (Riding, 1997, p. 2). While style is used in a variety of contexts, it is "always associated with individuality and is invariably used to describe an individual quality, form, activity, or behavior sustained over time" (p. 2). When this is applied to individual differences in cognition, it is referred to as cognitive style. Stemming from the work of Jung in the 1920s (Sternberg & Grigorenko, 1997, p. 701) and the work by Allport in 1937, cognitive style can be viewed "as a person's typical or habitual mode of problem

solving, thinking, perceiving and remembering" (p. 2). Studies related to cognitive styles "initially developed as a result of interest in individual differences" (Riding & Cheema, 1991, p. 2).

Grigerenko and Sternberg (1995) have pointed out that there has been three distinct periods of work in psychology related to the cognitive style tradition. The first was a 30-year period starting in the 1940s in which psychologists investigated individual differences as they related to cognition and perception. The second period, which began in the 1970s, was activity centered because it focused on ways of addressing individual differences for learners in the classroom. The third and current period has a learner-centered focus with an increased emphasis on how individual differences influence the teaching-learning transaction. This period is also concerned with the clarification of the concepts associated with cognitive style and with the development of assessment instruments for better investigating theories associated with cognitive style (Riding, 1997, p. 4).

Although the idea of cognitive style has been around for a long time, "the cognitive style construct has been elusive" (Riding & Cheema, 1991, p. 1). One reason for this

is that

> Different groups of researchers seem determined to pursue their own pet distinctions in cheerful disregard of one another...In my opinion, the right thing to do is to focus...on the search for individual differences which are basic, in the sense that they underlie (and to that extent, explain), a whole range of more readily observable differences. (Lewis, 1976, pp. 304-305)

The goal of such an approach is to develop super-ordinate dimensions that contain the primary features of a person's repertoire for learning, is manageable and geared to the real world of education and training, and is linked to assessment instruments and procedures that are easy to use (Riding, 1997, p. 8).

Researchers in the Adult Education program at Oklahoma State University have sought to address this concern by conducing a programmatic line of inquiry that addresses and seeks to combine several areas of cognitive style in an attempt to gain information for insightful ways of combining these dimensions of cognitive style. In her work with adult learners, Cross (1976) has pointed out that cognitive style is made up of several dimensions.

> People see and make sense of the world in different ways. They give their attention to different aspects of the environment; they approach problems with different methods for solution; they construct relationships in distinctive patterns; they process information in different but personally consistent

ways. (p. 115)

This line of inquiry has focused on the dimensions of learning strategy preferences, decision-making styles, and ways of knowing. This study will include all of these and expand on them by including cultural appreciation.

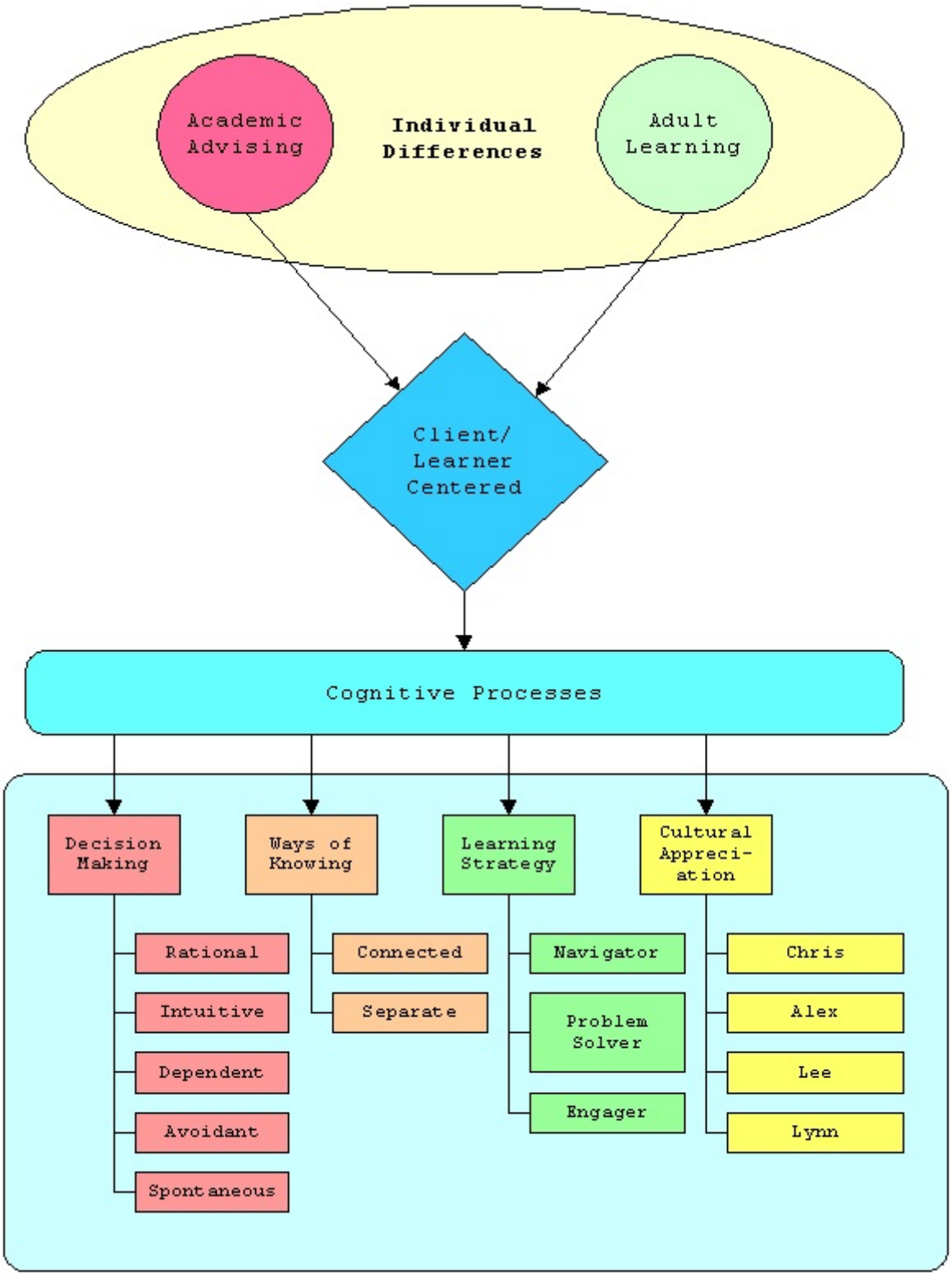
The concepts in this line of inquiry are cognitive processes. Cognition is "the study of how people receive, store, retrieve, transform, and transmit information" (Merriam & Caffarella, 1991, p. 159). Each of the concepts in this study involve cognitive processing:

- Learning strategies: "Techniques or skills that an individual elects to use in order to accomplish a learning task" (Fellenz & Conti, 1989, p. 7); appreciating one's learning strategy preference can "advance the understanding of the individuality of learning experiences and that promote learner self-knowledge and control of personal perceptions and judgments...for potential empowerment of the individual" (p. 23).
- Decision-making style: "The amount of information gathered and the number of alternatives considered when making a decision" (Scott & Bruce, 1995, p. 819); "differences in the way individuals make sense of the data they gather" (p. 819).
- Ways of knowing: "Different sets of spontaneous orientation to learning and knowledge" (Galotti, Drebus, & Reimer, 2001, p. 421) in which "connected and separate knowing represent different kinds of cognitive or learning styles" (p. 423).
- Cultural appreciation: "Cultural competence is comprised of knowledge and awareness. Cultural

> appreciation is how these components interact" (Tapp, 2002, p. 185).

This study described each of these cognitive processes for academic advisors who are members of NACADA. Existing valid and reliable instruments were used to describe these cognitive processes and to explore the interactions among them. Figure 1 depicts the conceptual framework for this study with these instruments; it is a modification of the Sander's (2008) conceptual framework (p. 22) with the addition of cultural appreciation.

Figure 1: Conceptual Framework for Study



Limitations

The following limitations may have affected the results of the study.

1. All four instruments used for data collection in this study were self-report instruments. With self-report instruments, "the researcher can never be sure that individuals are expressing their true attitudes, interests, values, or personalities" (Gay, Mills, & Airasian, 2009, p. 153). One strategy for overcoming this weakness is to "allow participants to respond anonymously" (p. 153). All responses for this study were submitted anonymously, and the respondents were informed both in the e-mail requesting participation in the study and in the IRB information that the responses were anonymous.

2. All four instruments utilized the selection method in which the respondents had to select from a given set of answers (p. 148). Consequently, each of the dimensions of cognitive style identified in this study were limited to the definitions inherent in these items.

3. Data were gathered online. As a result, the NACADA population was limited to those who had Internet access.

4. Although the leadership of NACADA was very helpful in making this study possible, their rules limited the posting of the request to participate in the study to three commissions within the organization. In order to get an adequate sample, participants of the most recent national conference were solicited to participate in the study.

Since this conference was held in Chicago, the sample may have been biased toward NACADA members in the Midwest.

5. Cultural appreciation was identified with the Cultural Appreciation in Lifelong Learning (CALL) instrument. This instrument has had limited use in research. However, it is the only instrument available for identifying cultural appreciation among adults in a practitioner setting.

CHAPTER 2

LITERATURE REVIEW

History of Academic Advising

The history of Academic Advising can be divided into four time periods (Frost, 2000; Kuhn, 2008). The first advising era was from 1636 until about 1870 and can be labeled as "Higher Education Before Academic Advising Was Defined" (Kuhn, 2008, p. 4). During that period all students took the same courses without any electives, and religion was taught for moral training. The presidents and faculty of the college were responsible for the students' intellectual and academic lives, moral training, and extracurricular activities (p. 4).

It was not until the 1870's with the introduction of curricular electives that the need for advisors arose (Kuhn, 2008). It was the President of Kenyon College, David B. Douglass, who recognized the need for academic advisors. Rutherford B. Hayes who was a student at Kenyon College and future President of the United States, wrote to his mother saying:

> A new rule has been established that each student shall choose from among the faculty someone who is to be his adviser and friend in all matters in which assistance is desired and is to be the medium of communication between the student and faculty. This

> I like very much. My patron is a tutor in the Grammar School who has graduated since I came here. (Hayes, 1841, p. 54, as cited in Kuhn, 2008, p. 5).

The second advising era was 1870-1970 (Frost, 2000; Kuhn 2008). It was called "Academic Advising as a Defined and Unexamined Activity" (Kuhn, 2008, p. 7).

Even though Harvard College appointed freshman advisers in 1888 because of "increased size and elective additions to the curriculum" (Gordon, 1992, p. 2), it was during this era that John Hopkins University was the leader in initiating the first faculty advisor in 1876 (Rudolph 1962). With the expansion of these courses and electives being offered, President Daniel Coiled Gilman recognized the need for the academic counseling and advising for scholarly students. John Hopkins University set up a "'system' in which students could choose from seven groups of courses, each group being similar to today's 'major'" (Kuhn, 2008, p. 5). Not only did Gilman show an understanding of the undergraduate advising role, but he also had a great understanding of the relationship between an advisor and a student.

> The adviser's relation to the student is like that of a lawyer to his client or of a physician to one who seeks his counsel. The office is not that of an inspector, nor of a proctor, nor of a recipient of excuses, nor of a distant and unapproachable embodiment of the authority of the Faculty. It is the adviser's business to listen to difficulties

> which the student assigned to him may bring to his notice; to act as his representative if any collective action is necessary on the part of the board of instruction; to see that every part of his course of studies has received the proper attention. (Gilman, 1886, as cited in Kuhn, 2008, pp. 5-6)

In the 1920's, "colleges and universities were busy perfecting various systems of freshman counseling, freshman week, [and] faculty advisers, and before long the campus psychologist as well as the college chaplain would join these many agencies in giving organized expression to a purpose that had once been served most simply by a dedicated faculty" (Rudolph, 1962, p. 460). Even though the concept of advising was forming, it was still an unexamined activity in the second era.

During the latter part of this era, increasing enrollment and changes were stimulated by the GI Bill after World War II. In the 1960's, higher education grew more than it had in any previous decades (Frost, 2000, p. 10).

The 1970's to present is the third era of academic advising (Frost, 2000). It is known as the era of "Academic Advising as a Defined and Examined Activity" (p. 10). During this third era, three extraordinary events changed academic advising forever.

The first change in the 1970's to academic advising came

when Crookston (1972) and O'Banion (1972) in separate studies linked advising and student development. They used the concept of "Developmental Advising" as a link to "explain advising as a form of teaching" (Frost, 2000, p. 12).

The theory of developmental advising guided and helped develop academic advising throughout the 1980's and 1990's (p. 12). The second event was the establishment of the National Academic Advising Association (NACADA) in 1977. With the development of NACADA, the third change in academic advising occurred; this was the development of professional academic advising.

National Academic Advising Association

According to the story told by Beatty (1991), the history of the National Academic Advising Association (NACADA) started in 1977 when two people met in an elevator while attending the American College Personnel Association Conference in Denver, Colorado (NACADA, 2006). A woman by the name of Toni Trombley was holding a flyer that announced the first national conference on academic advising. The other person, Tom Grites, was reading the flyer over her shoulder. Grites asked about the flyer that Trombley was holding. Trombley responded that she was planning to attend

the sessions on advising at the conference and was going to ask the presenter's permission to pass out flyers for a conference on academic advising in each session. When the elevator stopped, they left and went their separate ways. However, Grites was the presenter at all the advising sessions. While it is unknown if their meeting was by chance or destiny, Trombley and Grites became the first two presidents of the National Academic Advising Association (pp. 5-6).

Trombley was hired in 1970 by the University of Vermont because she shared the same commitment that the university had for academic advising (Beatty, 1991). Neither Trombley nor those at the university knew the commitment that they shared would evolve into the largest organization for academic advising in higher education. Trombley's "desire to define academic advising and her persuasiveness convinced her institution to host the first national conference on Academic Advising" (p. 6). The conference was based on Trombley's belief that advisors could grow professionally as well as personally.

When the University of Vermont agreed to sponsor the first National Conference on Academic Advising, the planners stated their purpose for the conference:

> We at the University of Vermont recognize the need for an opportunity to share and discuss relevant issues concerning academic advising. In order to meet this need, we are sponsoring the first National Conference on Academic Advising for those individuals associated with any aspect of an academic advising system. This conference is directed toward faculty, administrators, and advisors in higher education who have common concerns related to academic advising. Our goal is to provide an opportunity for participants to learn from others as well as share information which they feel will make academic advising a more viable and accountable system. (Beatty, 1991, p. 6)

The first national conference was held October 17-19, 1977, in Burlington, Vermont. With nearly 275 educators gathered, they shared their "enthusiasm for, frustration with, and commitment to the improvement of academic advising" (Beatty, 1991, p. 6). NACADA is now celebrating its 32nd anniversary. The regional conferences have also grown each year in participation and popularity since 1984 when the first regional conferences were held in Michigan and New York (Beatty, 1991; Thurmond & Miller, 2006). Each state has its own association, and each of the state associations and providence associations in Canada belongs to one of the 10 regional associations.

Regional associations were developed to represent "the membership within the geographic regions through the facilitation of networking opportunities and member

recruitment and service" (NACADA, Regional Division). Each region conducts an annual conference and offers additional state/province or area drive-in professional development and training opportunities.

From the beginning in 1977 to the present, NACADA has strived to improve the profession of academic advising through advisor training and development. However, it was not until 1991 that the Core Values for Academic Advising were drafted (Thurmond & Miller, 2006, pp. 3-4). These values were adopted in 1994 and updated in 2005 "to guide professional practice and remind advisors of their responsibilities to students, colleagues, institutions, society, and themselves" (p. 4). The Core Values are:

1. Advisors are responsible to the individuals they advise.
2. Advisers are responsible for involving others, when appropriate, in the advising process.
3. Advisors are responsible to their institutions.
4. Advisors are responsible to higher education in general.
5. Advisors are responsible to their educational community.
6. Advisors are responsible for their professional practices and for themselves personally. (Gordon, 2008, pp. 526-528)

The National Academic Advising Association provides these core values to "affirm the importance of advising within the academy and acknowledge the impact that advising

interactions can have on individuals, institutions and society and themselves." (NACADA, 2005). These values are not to dictate a manner through which academic advising takes place, nor do they advocate any advising philosophies. The core values are "the reference points advisors use to consider their individual philosophies, strengths, and opportunities for professional growth" (NACADA 2005). Individual advisors are responsible for considering each core value in relationship to their institution's values and their personal values.

Continuing Professional Education

The sixth National Academic Core Value states that "advisors are responsible for their professional practices" (Gordon, 2008, p. 528). Academic advisors are able to continuously train and learn to improve their advising skills with the continuing professional education and adult learning concepts.

Continuing Professional Education is an extremely important part of the activities and programs of the National Academic Advising Association. The ever-changing world in higher education makes it important for an advisor to keep abreast of those changes. Whether working full-time or part-time, a professional academic advisor's day is spent

in addressing academic curriculum requirements, policies, and procedures of the college or university to enhance and promote students' academic and personal success (Self, 2008, p. 269). "Learning involves possessing, or acquiring, the knowledge and skill to learn effectively in whatever learning situation" (p. 269) one encounters. If you possess the necessary knowledge and skill, you have learned how to learn; and when you help yourself or others to acquire that kind of knowledge or skill, the concept is also at work (Smith, 2008, p. 19). Academic advisors are better able to help themselves and their advisees in making good educational choices when they improve themselves through continuing learning. Therefore, lifelong learning is essential for academic advisors.

> A dynamic concept of professionalization offers educators both the opportunity and the challenge to use active principles of learning to help achieve the basic aims of the group with which they work. They become not merely reinforcers of the status quo, as they so often are now, but the colleagues of all who work to further the power and the responsibility of the vocation. (Houle, 1980, p. 30)

Full effectiveness of lifelong learning must be conceptualized and applied in a sophisticated fashion. Those seeking professionalizing goals for a vocation use one

or more of Houle's (1980) three major modes of learning (p. 31).

The first mode of learning is inquiry. Inquiry is the process of creating new ideas, techniques, and strategies (Houle, 1980). This mode usually occurs in a structured setting such as a break-out session at a conference or a round-table discussion group. It is frequently a by-product directed primarily at establishing policies, dealing with compromises, and planning a project (p. 31).

The second mode of learning is instruction. The purpose of instruction is to circulate established skills, knowledge, or sensitiveness (Houle, 1980). The use of instruction assumes that the teacher, book, or other source already knows or is designed to conduct everything the student will learn. This mode of learning is extensively used in higher education, and often people think of it as the only form of education. The success of this mode of instruction is measured by the student's goals that are known by the teacher at the beginning of the learning process and that are modified throughout the learning process. This mode of learning is known as competency-based instruction. "It is easy to use when measuring skill, but

more difficult when dealing with knowledge or sensitiveness" (p. 32).

The mode of performance is the third process of learning. This is the "process of internalizing an idea or using a practice habitually, so that it becomes a fundamental part of the way in which a learner thinks about and undertakes his or her work" (Houle, 1980, p. 32). Performance is chiefly used in "practical" or clinical teaching. It is instilled by drill, close supervision, clinical presentations, and long continued demonstration by those who provide instruction. "The use of this mode in the workplace is sometimes guided by what is called change theory. Often it involves not only formal educational activities but also manipulation of various physical and social aspects of the environment" (pp. 32-33).

Another attribute to continuing education is that it enables practitioners to progress from being an amateur to being an expert in their profession (Knox, 1993, p. 275). This is accomplished by formal and informal education furnished by the workplace, by professional associations, and by other providers.

> Every member of a profession (even a person who follows a traditional sequence of study and practice) has a distinctive style of lifelong

> learning influenced by an individual background, a unique combination of character traits, and the special circumstances of his or her immediate environment, including stimuli provided by people and institutions who seek to advance continued education. As personality and circumstances change, so does this pattern of learning. (Houle, 1980, p.77)

With changing personalities and circumstances in professional learning, there is no easy or automatic method of continuing education found that will ensure the establishment and maintenance to meet the ethical, intellectual, and social standard in a "professionalizing occupation amid the stresses and temptations of practice" (Houle, 1980, p. 74). Vocations wishing to professionalize themselves such as academic advisors must raise and maintain their integrity by the use of principles and practice. This could be accomplished by using the positive force of education and the negative force of self-regulation, by having free discussion, and by having the opportunity to scrutinize the governing principles of the practice. The intent of every form of continuing education is to "convey a complex attitude made up of a readiness to use the best ideas and techniques of the moment but also to expect that they will be modified or replaced" (p. 75). "The major lesson of continuing education is to expect that the

unexpected will continue to occur" (p. 75).

"Members of a specific profession are like all other adults in that they share basic human processes such as motivation, cognition, and emotions" (Cervero, 1988, p. 16). Continuing professional education is based on the fact that the participants are adults who are working in a particular setting. Therefore, many of the same processes that are used in continuing professional education are used in adult and continuing education, development, and training (p. 16).

It is estimated that nearly 25% of the American workforce claims membership in a profession (Cervero, 1998, p. 3). These professions are part of people's everyday lives. These professionals are varied from those who are educators, who manages businesses, who settle civil disputes, who heal the body and soul, and who fight wars. The fundamental purpose of continuing education is to improve the practices of these professionals (Cervero, 2001). Five trends have affected continued professional education since Houle "predicted that continuing education would grow in stature and size to rival pre-service professional education" (Cervero, 2001, p. 1).

The first trend is that "the amount of continuing education offered at the workplace dwarfs that offered by

any other type of provider, and probably all other providers combined" (Cervero, 2001, p. 19). It was estimated in 1996 that $60,000 billion was spent on providing continuing professional education to more than 59 million people with a majority of this money being spent on professionals and middle and upper management. This amount does not include the amount spent on employee education (p. 19).

The second trend is that "an increasing number of programs are being offered in distance education format by universities, professional associations and for-profit providers" (Cervero, 2001, p. 20). This is the trend that has clearly done the most in changing the world of continuing professional education. It is the age of the personal computer. Every university that has continuing education more than unlikely will have web-based or on-line based programs (p. 20). Certificate programs that issue completion documents and at times accreditation to students are growing in enrollment by almost 20% annually (Koss-Feder, 1998).

Professional associations such as the National Academic Advising Association are major providers of continuing education. Education is the primary function of associations. "There are over 5,000 US and Canadian

associations and many more state, provincial, and local association that are either organized independently or are affiliated with a national body" (Cervero, 2001, p. 21).

The third trend is that "there are increasing collaborative arrangements among providers, especially between universities and workplaces" (Cervero, 2001, p. 21). Universities have been pressured to provide economic development for their state or region, and collaboration of programs can provide this. "Long-lasting educational trends often come not from the work of educators, but from larger political, economic and cultural movements that push educational institutions in certain ways" (p. 21). Companies have collaborated with universities to enhance continuing professional education for its managers that reflect corporate priorities. This has become apparent in Oklahoma. For example, Northeastern State University has developed its Accounting and Financial Analysis program with State Farm to further the employees' educational progress. Another example of this joint effort for continuing professional education is in Kansas where Kansas State University houses the NACADA association's home base (NACADA Web Site).

The fourth trend is that "the corporatization of continuing education has increased dramatically" (Cervero,

2001, p. 22). The financing of continuing education has always been an issue for institutions and organizations. Profits from the continuing education activities have often been used to support core university functions of research and teaching. "The historic battles between centralized and decentralized models of continuing education in universities revolve largely around the questions of who will receive the surplus income from programming efforts, the professional school and its department or the university-wide continuing education unit" (p. 22). Professional associations usually use the income from continuing education activities to support other non-revenue generating services for its members (p. 22).

The fifth trend is that "continuing education is being used more frequently to regulate professional practice" (Cervero, 2001, p. 23). Whereas the first four trends focused on continuing education, this trend deals directly with a professional's practice. Continuing education has become an accountability system for professional practices. "As regulatory bodies struggled to develop accountability mechanisms, participation in continuing education was often the method of choice" (p. 24). However, this approach has made little or no changes in addressing the underlying issue

of competence (Queeney, 2000, p. 378).

Adult Learning

"We have no single answer, no one theory or model of adult learning that explains all that we know about adult learners, the various contexts where learning takes place and the process of learning itself" (Merriam, 2001, p. 3). Although there is a mosaic of theories, models, set of principles and knowledge base about adult learning, there are two important elements that have formed two foundational elements of adult learning theory. These are andragogy and self-directed learning (p.3).

Andragogy

Trying to separate adult education from other forms of education, Malcolm Knowles in 1968 proposed "a new label and new technology" by using the European concept of andragogy which he defined as "the art and science of helping adults learn" (Knowles, 1980, p. 43). This view of adult education is in contrast with pedagogy, which is "the art and science of helping children learn" (p. 43).

Andragogy assumes that adults are active learners involved in all steps of their learning process from selection to evaluation. In this learning process, adults becomes self-directed learners. The first assumption in the

andragogical model is the concept of the learner as a self-directed learner. The psychological definition of an adult is "one who has arrived at a self-concept of being responsible for one's own life, of being self-directing" (Knowles, 1984, p. 9). Even with adults being self-directing in every aspect of their lives such as the work place and everyday life, they convert back to their conditioning in school as soon as education or training is mentioned (p. 9). Being aware of this problem, adult educators "have been devising strategies for helping adults make the transition from being dependent learner to being self-direct learners" (p. 9-10). One strategy for doing this is including an orientation of self-directed learning at the beginning of educational activity.

The second assumption in the model of andragogy regards the role of the learner's experience. This model assumes that the adult learner has a greater "volume and a different quality of experience from youth" (Knowles, 1984, p. 10), when entering and educational activity. This occurs because adults have different roles or performed differently from the youth, such as employment and parenting. Children also have experiences, but an adult "has many more which have had more time to become integrated into a unique personality"

(Elias & Merriam, 2005, p. 133). These difference have several consequences for education.

> First of all, it means that, for many kinds of learning, adults are themselves the richest resources for one another; hence the greater emphasis in adult education on such techniques...that make use of the experiences of the learners. (Knowles, 1984, p. 10)

The negative side to this is that because of the adult learner's experience it is possible that they will develop habitual ways of "thinking and acting, preconceptions about reality, prejudices, and defensiveness about their past ways of thinking and doing" (p. 10).

The third assumption of andragogy is that "adults become ready to learn when they experience a need to know or do something in order to perform more effectively in some aspect of their lives" (Knowles, 1984, p. 11). This implies that adults will not learn what is not relevant to this stage in their lives (Elias & Merriam, 2005, p. 132). What is relevant depends on interests and particular needs to each stage of their lives (p. 132).

"Because adults are motivated to learn after they experience a need in their life situation" (Knowles, 1984, p. 11), they enter into the fourth stage of orientation to learning. This is the assumption that adults become life-

centered, task-centered, or problem-centered orientation to learning.

> Knowles advocates an adult educational curriculum that subsumes specific subject content under general problem area. The real and immediate needs of adult learners are more effectively met through problem-solving group techniques in which traditional curriculum content is a by-product. (Elias & Merriam, 2005, p. 134)

Adults learn for the sake of learning to be able to perform tasks, to address problems, or to be more satisfied in life. "The chief implication of this assumption is the importance of organizing learning experiences around life situations rather than according to subject matter units" (Knowles, 1984, p. 12).

The fifth assumption of andragogy is the motivation to learn. Even though adults can be motivated by external motivators, better job, and salary increase, the andragogial model holds that internal motivators are more potent to the adult learner (Knolwes, 1984, p. 12). This does not exclude the fact that adults also respond to external motivators. Such factor as self-esteem and quality of life are important in giving adults a reason to learn (Knowles, Holton, & Swanson, 1998).

The sixth assumption is the learner's need to know. Adults want to know the reason it is important to learn and

how they can benefit from it (Knowles, Holton, & Swanson, 1998). The adult learner needs to value the lessons, and learner's expectations should be filled in the classroom by including an explanation of the importance of the matter.

Knowles drew several implications for the design and evaluation of activities with the adult learner. One example is the first assumption that adults become self-directed learners as they mature and become more independent (Merriam & Caffarella, 1999, p. 272).

Self-Directed Learning

"Being self-directing means that adult students can participate in the diagnosis of their learning needs, the planning and implementation of the learning experiences, and the evaluation of those experiences" (Merriam & Caffarella, 1999, p. 272-273). Though Knowles was the one who noted that adult become self-directed learners as they mature, it was Tough (1967, 1971), building on the work of Houle (1961), "who provided the first comprehensive description of self-directed learning as a form of study" (Merriam, 2001, p. 8).

Tough (1967, 1971, 1979) gave the first comprehensive description of self-directed learning; it however, he termed it as self-planned learning. Tough defined self-planned learning by drawing on a study, of learning projects that

was done with 66 people from Ontario, Canada. He found that "70% of all learning projects were planned by the learners themselves" (Merrriam & Caffarella, 1999, p. 295). Tough (1971) found "that learners used thirteen steps in self-planned learning projects, representing key decision-making points about choosing what, where, and how to learn" (pp. 94-95).

1. Deciding what detailed knowledge and skill to learn
2. Deciding the specific activities, methods, resources, or equipment for learning
3. Deciding where to learn
4. Setting specific deadline or intermediate targets
5. Deciding when to begin a learning episode
6. Deciding the pace at which to proceed during a learning episode
7. Estimating the current level of his knowledge and skill or his progress in gaining the desired knowledge and skill
8. Detecting any factor that has been hindering learning or discovering inefficient aspects of the current procedures
9. Obtaining the desired resources or equipment or reaching the desired place or resource
10. Preparing or adapting a room (or certain resources, furniture or equipment) for learning or arranging certain other physical conditions in preparation for learning
11. Saving or obtaining the money necessary for the use of certain human or nonhuman resources
12. Finding time for the learning
13. Taking steps to increase the motivation for certain learning episodes. (pp. 94-95)

Tough's model of self-directed learning has been used for numerous dissertations and research studies around the world

(Merriam & Caffarella, 1999).

Knowles's (1975) model for self-direct learning consists of six major steps:

1. Climate setting
2. Diagnosing learning needs
3. Formulating learning goals
4. Identifying human and material resources for learning
5. Choosing and implementing appropriate learning strategies
6. Evaluating learning outcomes. (Merriam & Caffarella, 1999, p. 295)

Even though Knowles steps are somewhat similar to those of Tough (1979), Knowles' steps include "numerous resources for both learners and teachers for completing each of these tasks. Among the materials he describes, we have found the ones on learning contracts and evaluation to be the most useful" (p. 295).

Learning contracts are "formal agreements written by learners that detailed what should be learned, how the learning will be accomplished, when the learning will occur, and what criteria will be used to evaluate the results of the learning" (Berger, Caffarella, & O'Donnell, 2004, p. 290). The word contract used by Knowles (1986) is legitimate and these agreements are fair to all parties concerned. Even though it is common for teachers to make contracts with students, Knowles (1975) suggests that self-directed

learners contract themselves (p. 26). The self-directed learner contract "will specify how you will go about it and how you will know when you are there" (p. 26).

Diversity

Like a giant magnet, the New World attracted men and women of various races and faiths from many lands from the day when the settlers came to Jamestown in 1607 until the colonists united to demand freedom from England in 1776 (Bennett & Cribb, 2008, pp. 135, 222). Among those who came were Dutch, English, Finns, French, Germans, Irish, Scots, Spaniards, and Swedes. They included Atheists, Baptists, Catholics, Huguenots, Jews, Pilgrims, Puritans, and Quakers. They came from every walk of life and included adventurers, beggars, convicts, farmers, missionaries, servants, soldiers, sailors, and salves. Some came eagerly in hope of a better life. Some came in despair to escape misery and abuse. Some were brought by force. However, all shared the dangers and hardships of a new life in an untamed land (United States, pp. 1-22). Why did the immigrants come? Some came for freedom of worship. Missionaries came to convert the native people to Christianity. Others came because the country's fertile soil, rich timber, abundant game and fish offered opportunities for a better living than they had in

their own country. Some came for political reasons. Others came for the opportunity to raise above the class to which they had been born (pp. 1-22). Some sought a country where they might talk freely and have meetings whenever and wherever they chose. Factors such as these drew the early immigrants. These continue to be the same reasons immigrants come to America today (pp. 1-22).

The worldview today is not what it was over 200 hundred years ago. The worldview is not even what it was when the Statue of Liberty was dedicated in 1886. Immigrants that passed through Ellis Island in the 19th and 20th centuries were very proud to see the Lady and her words that welcomed them to their new world. The words from Emma Lazarus' sonnet, New Colossus, are:

> Not like the brazen giant of Greek fame,
> With conquering limbs astride from land to land;
> Here at our sea-washed, sunset gates shall stand
> A mighty woman with a torch, whose flame
> Is the imprisoned lightning, and her name
> Mother of Exiles. From her beacon-hand
> Glows world-wide welcome; her mild eyes command
> The air-bridged harbor that twin cities frame.
> "Keep, ancient lands, your storied pomp!" cries she
> With silent lips. "Give me your tired, your poor,
> Your huddled masses yearning to breathe free,
> The wretched refuse of your teeming shore.
> Send these, the homeless, tempest-tossed to me,
> I lift my lamp beside the golden door!"

"The United States is the most ethnically diverse

country in the world, representing 100 racial, ethnic, and cultural groups" (Taylor, 1998, p. 30). These 100 racial, ethnic, and cultural groups have groups within their groups (Gordon, 1992). This diversity provides a challenge for professionals and their continuing education.

> The average values of different populations provide no information about any one individual. People should realize that they live in a multi-cultural, multilingual, and pluralistic society. It is infrequent that individuals have no contact with people whose cultural backgrounds or lifestyles differ from their own. In one way or another, in the diverse American Society, human beings are bound to interact with individuals who can be classified as "Culturally different," and it is the responsibility of helping professionals to become more culturally aware and sensitive to their work with different populations. (Sue et al., 1982 p. 46)

Cultural Competence

According to the U. S. Department of Health and Human Services, cultural competence is: A set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals that enables effective work in cross-cultural situations. "Culture" refers to integrated patterns of human behavior that include the language, thoughts, communications, actions, customs, beliefs, values, and institutions of racial, ethnic, religious, or social groups. "Competence" implies having the

capacity to function effectively as an individual and an organization within the context of the cultural beliefs, behaviors, and needs presented by consumers and their communities (Adapted from Cross, 1989). Cultural competency is respect for and acceptance of difference and self-assessment of another culture. It includes giving attention to the dynamics of difference, cultural knowledge, and development, and it includes having the resources and flexibility within a profession or organization to meet the needs of minority populations (Cross, Bazron, Dennis, & Isaacs, 1989).

Over the years, several studies and names have been given to the process of measuring cultural differences and competency. As far back as the 1950s, multicultural counseling was used interchangeably with cultural competence (Abreu & Atkinson, 2000, p. 641). The need for cultural competence dates back to 1973 when the conference for the American Psychological Association reached a conclusion that cultural competence was a matter of ethical practice (p. 641).

Helping professionals such as social workers, physicians, therapists and educators, and advisors and counselors are continually challenged to demonstrate

cultural appreciation in service provision. One of the important explanation for the problems in service delivery involves the inability of helping professionals to provide culturally appreciative assistance.

> The argument for addressing multicultural issues in the helping professions is at least 40 years old. Recent studies have documented inequalities in services to children and families of color when compared to services received by Caucasian children and families. (Tapp, nd., p. 1)

It is essential that continuing professional education include activities for building enhanced awareness of social cultural context among helping professionals.

Multicultural Awareness

To be multicultural aware and competent, a professional needs to understand how a culture forms.

> As America's ethnic and racial demographics continue to shift, not only on college campuses but throughout the nation, it is essential that administrators and practitioners prepare to effectively deliver cross-cultural services. Professionals of all ethnic and racial backgrounds need to gain multi-cultural awareness and multi-cultural competence. (Gilbert, 2005, p. 1)

Cultural understanding can be broken down into five steps (Bonder, Martin, & Miracle, 2001). First, culture is learned. Like any culture, the values and beliefs of the elders, grandparents, and older adults are passed down to each new generation.

Second, culture is localized. “Culture is created through specific interactions with specific individuals. Each person draws meaningful elements from these interactions and shares them with some but not all individuals within society” (Bonder, Martin, & Miracle, 2001, p. 36).

Third, culture is patterned. It is learned through repetition. The repetition of specific way of behavior and talk establish normal and customary expectations for structural social interactions (Bonder, Martin, & Miracle, 2001, p. 36).

Fourth culture is evaluative. The main component of a culture is its values. “Values reflect shared beliefs that facilitate the social interaction without which society would not be possible” (Bonder, Martin, & Miracle, 2001, p. 36).

Fifth, culture has continuity with change. Cultures are in general stable, but cultures and knowledge of life does change over the years. New ideas, new environments, and new objects are introduced throughout the culture’s being (Bonder, Martin, & Miracle, 2001, p. 36).

Academic advisors need to be aware of these steps to understand and advise their multicultural students.

Advisors cannot merely increase awareness and knowledge about other culture. Advisors need to recognize their culture so that they themselves appreciate the cultural lenses through which advisors interpret others (Lou, 1997).

Addressing diversity and culture has been a challenge in higher education in America since its beginning. Before 1770, there were seven colleges in the New World. These colleges were taught and attended by the upper-class white males. In 1783, Lucinda Foote at age 12 was fully qualified to attend Yale University but was turned down because she was a female (Rudolph, 1962, p. 307). Georgia Female College at Macon was the first to experiment in women's collegiate education. The college was chartered in 1836 and opened in 1839 (p. 307). In 1837 Oberlin College was the first to inaugurated co-educational higher education by enrolling four female freshman (p. 308).

The Morrill Act of 1890 addressed the issue of diversity. It provided "that no appropriations would go to states that denied admission to the colleges on the basis of race unless they also set up separate but equal facilities" (Rudolph, 1962, p. 254). This led to the establishment of separate college for African-Americans, and by 1896 the Supreme Court declared in Plessy vs Ferguson "made a

requirement that Negroes and whites use separate facilities...was not discriminatory so long as equally good facilities were provided for each group" (Wright, 1963, p. 231).

Diversity was fully encountered in higher education in the 1960's during the Civil Rights Movement. Since educational institutions were predominantly white, integration during the 1960's and 1970's brought multicultural awareness to universities across the nation (Gilbert, 2005, p. 1).

Starting in 1950's and before the bombing to the World Trade Center on September 11, 2001, the number of international students attending United States universities increased each year (Koh Chin & Blandarie, 2006). This number has slowed since the restriction for and harsh changes on obtaining an United States visa policy because of the bombing of the World Trade Center. Even after September 11, 2001, in 2005 there were 564,766 international students in the United States (Clark & Kalionzes, 2008, p. 215).

"Students from diverse backgrounds continue to experience unique challenges accessing and succeeding in higher education, despite their growing numbers in college enrollment and degree attainment" (Clark & Kalionze, 2008,

p. 204). The National Academic Advising Association (NACADA) has been working on the growing concern of advising the multicultural student. NACADA has written and produced a Pocket Guide Series on Understanding Cultural Identity and Worldview Development. Topics in this guide include conceptual theories, identity development, amalgamation theories, and relational skills. The guide also includes an explanation of Bucher's six areas of development of diversity consciousness. These areas are:

(1) examining ourselves and our worlds
(2) expanding our knowledge of others and their worlds
(3) stepping outside ourselves
(4) gauging the level of the playing field
(5) checking up on ourselves and
(6) following through. (NACADA, 2007, p. 3)

NACADA's process for underlying cultural identity is to start with oneself. Advisors need to understand their own culture before being able to understand their advisees' culture. Agreeing with others (Bonder, Martin, & Miracle, 2001), the pocket guide points out that cultural worldview and identity are "not something we are born with, but rather are something that we have learned and that will continue to develop over the course of our lives" (Cunningham, 2007, p. 6). As others have pointed out (Bonder, Martin, & Miracle, 2001), the guide acknowledges that cultural identity can and

will change throughout life. Political, economic, and social experiences can and will alter or reinforce one's status or position in society (Gollnick & Chinn, 2006).

Cultural Appreciation

The concept of cultural competence has been conceptualized as cultural appreciation in the field of Adult Education. In 1994, the U.S. Department of Health and Human Services defined cultural competence as a set of academic and interpersonal skills. This definition was narrowed by the American Psychological Association to the two components of knowledge and awareness. Awareness and knowledge are two components of cultural competence (Ponterotto et al., 1994, p. 17). Knowledge refers to one's knowledge of the worldviews and values of diverse groups. Awareness focuses on a person's own cultural socialization and attitudes.

Using multivariate techniques to create the Cultural Appreciation in Lifelong Learning (CALL) instrument, Tapp (2002) concluded that "cultural appreciation is the interaction of the knowledge and awareness components of cultural competence" (p. 184). CALL is a "valid and reliable instrument for identifying cultural appreciation" (p. 170). It places respondents into one of four possible groups.

These groups "were given non-gender-specific names to thwart personalizing any characteristics of each group that could be associated with gender" (p. 179). These group names are Chris, Alex, Lee, and Lynn. "Within the four groups there is a clear distinction as each group demonstrates varying degrees of knowledge and awareness regarding cultural appreciation" (pp. 180-181). Those in the Chris and Alex group are separated from those in the Lee and Lynn group by having a higher knowledge concerning cultural diversity than those in the Lee and Lynn group (pp. 176-177). Within the Lee and Lynn group, the Lee group has a greater knowledge concerning cultural diversity than the Lynn group.

However, the groups are also separated by levels of awareness. Within the high-knowledge group, the Chris and Alex groups are separated by the Chris group having a greater awareness of cultural diversity than the Alex group. Within the low-knowledge group, the Lee and Lynn groups are separated by the Lee group having a greater awareness of cultural diversity than the Lynn group.

Thus, while the field of psychology has defined cultural competency in broad terms, specific research with social service professionals in the field of Adult Education has led to the use of the term cultural appreciation to

refer to the interaction of the two elements that make up the general definition of cultural competency. Just as with the social services workers used to develop CALL, for academic advisors:

> One's level of cultural appreciation is a personal choice based on a person's actions and attitudes related to knowledge and awareness concerning cultural diversity. In a democratic society, people may privately practice any level of cultural appreciation which they choose. However, in the public arena and especially in the workforce, various contextual situations require different minimum levels of cultural appreciation. The field of social work requires a high level of cultural appreciation because of the nature of the profession and the makeup of the clientele. In the helping professions, this high level is needed for the efficient delivery of social services. This level of cultural appreciation can be achieved through self-awareness and learning based on increased knowledge related to cultural diversity and on attitudinal changes concerning multicultural issues. (Tapp, 2002, pp. 196-197)

Watkins (2006) conducted a study that illustrates the importance of identifying the cultural appreciation of professionals in the field of education. Using CALL, Watkins identified the cultural appreciation level of Title 1 teachers in the public school system in Tulsa, Oklahoma. Title 1 is a federal program that "was developed to provide financial assistance to schools servicing high concentrations of poor students to expand and improve their educational programs" (p. 131).

Watkins (2006) found that "the predominant cultural appreciation of Tulsa's Title 1 teachers is the individualistic view which is not compatible with the purpose and mission of the original Title 1 legislation" (p. 148). Two-thirds of the teachers in the Title 1 program "believe that all individuals are responsible for their life situations and are unaware of any barriers which restrict minority groups. They have a limited knowledge of culturally diverse groups and the challenges they face" (p. 149). "These results imply that the Title 1 teachers do not feel that cultural diversity is important in education" (p. 149). This is despite the fact that "the majority of children who attend Title 1 schools are poor children of diverse minority groups" (p. 149), and this is in contrast with the goals of the Title 1 legislation. Even though the students in the program and the purpose of the program mandate the need to address cultural diversity, the teachers in this program who share this individualistic view to cultural diversity "are either uncomfortable with or insensitive to culture or reject the necessity for cultural diversity" (p. 149), and "they feel that culture is not a necessity when teaching diverse groups of students" (p. 149).

Watkins (2006) recommended that training be used to

address this situation. She suggested that both knowledge and awareness of cultural diversity be addressed. This is because the cultural appreciation of the teachers is different from the predominant view of the culture of their students. While the vast majority of the teachers supported an individualistic view, the student come from a cultural background that supports a collectivist view.

> It is called collectivist in contrast to individualistic. Collectivism refers to a world view where people are integrated into strong, cohesive groups, and relationships with others and loyalty to one's group are of paramount importance. Individualism pertains to belief systems in which ties between individuals are loose and everyone is expected to look after themselves and their nuclear family. (p. 151)

Academic Advising and Decisions

During a student's college years, there are critical decisions that needs to be made along the way (Gordon, 1992). It is important that advisors understand where and how these students makes their decisions. Tiedeman and O'Hara in 1963 provided a model that takes into account all the factors inherent in making decisions. They stated that if advisors and students are aware of the factors inherent in making decisions, they will be able to base their decisions on full knowledge of themselves and appropriate

external information as well (p. 14). Tiedeman and O'Hara's (1963), model divides decision making into two aspects: anticipation and accommodation. With anticipation, "the person becomes aware of the problem, identifies alternatives, moves toward a choice, and implements a decision" (p. 14). The accommodation phase involves "contact with a real work environment and the adjustment and integration into that environment" (p. 14).

Harren (1979) identifies some of the factors that influence the effectiveness of an individual's decision making. There are three decision making styles that students may use in making their decisions: rational, inductive, and dependent.

> Rational decisions makers use systematic and logical strategies while intuitive decision makers rely on how a decision "feels" and are often impulsive. The dependent style denies responsibility for choices and complies with the authority of others. Harren believes that the rational style is most effective since the strategies used are more thoughtful and logical. Phillies, Pazienza, and Ferrin (1984) found that while rational decisional strategies generate problem-solving confidence, the intuitive style was associated with both the rational style and a confident approach to problem solving. They suggest that perhaps the intuitive strategy might offer an emotionally satisfying alternative. (Gordon, 1992, p. 14)

Advisors can help their advisees learn strategies for

making-decisions by helping students identify resources needed to make decisions, teach decision-making skills, and having them take responsibilities for the decisions they have made (Gordon, 1992, p. 14).

There are a host of decision-making models advisors can use when helping their advisees to make sound and satisfying decisions (Steel & McDonald, 2008, p. 163). Gordon's (1992) model combined academic and career-planning that relies on a student-centered approach to seek self-knowledge, occupational knowledge, educational knowledge, and decision-making knowledge (p. 163). Schein and Laff (1997) also propose a student-centered approach that focuses on a questionnaire that asks the students about their likes and dislikes, strengths and weaknesses, and hope for the future. This model dealt more with the students designing a field of study "rather than selecting an established major" (p. 163). Beck (1999) had a chaos theory to guide undecided students that used metaphor to articulate key guides for advising the undecided students. Bertram (1996) combined his theory with the rational decision-making model used by advisors that would advocate less rational approach when working with undecided students. All four models are summarized and reviewed by Steele (2003).

General Decision Making Styles

Decision-Making Styles

Decision-making styles are "the learned, habitual response pattern exhibited by an individual when confronted with a decision situation" (Scott & Bruce, 1995, p. 820). Decision-making style is a cognitive process (p. 810). "Cognitive style is the manner in which individuals take in data from the outside world and make decisions based on the data" (p. 819). Decision-making styles are based on "the amount of information gathered and the number of alternatives considered when making a decision" and on "differences in the way individuals make sense of the data they gather" (p. 819).

Decision-making styles are behavioral pattern rather than a personality trait (Scott & Bruce, 1995, p. 820) or a characteristic (p. 819). Five decision-making styles have been identified. These five styles are rational, intuitive, dependent, avoidant, and spontaneous.

1. Rational decision-making style is characterized by a thorough search for and logical evaluation of alternatives.
2. Intuitive decisions-making style is characterized by a reliance on hunches and feelings.
3. Dependent decision-making style is characterized by a search for advice and direction from others.

4. Avoidant decision-making style is characterized by attempts to avoid decision making.
5. Spontaneous decision-making style reflects a sense of immediacy and a desire to get through the decision-making process as soon as possible. (pp. 820 & 823)

Habit, Style, or Both

The question has arisen related to whether decision making is a habit, style, or combination of the two. To investigate this, a study was conducted that "explored the relations between individual decision-making styles as measured by the General Decision-making Style test, developed by Scott and Bruce (1995) and some mental abilities theoretically related to decision-making" (Thunholm, 2004, p. 931). If such relationships are found, it would imply that decision-making style is not only a habit but prove a stable characteristic of the decision maker. The participants of this study were 206 military officers (captains) that had enrolled in a Staff Officers Program at a Swedish National Defense College. Average age of these officers were 33. Five of the participants were female.

Besides using the GDMS, this study used five other instruments to determine if decision making is habitual. These instruments were Basic Self-esteem Scale, the Earning

Self-esteem Scale, the Action Control Scales, the Advanced Progressive Matrices, and Marlowe-Crown Social Desirability Scale (Thunholm, 2001).

The findings from this study support Scott and Bruce's (1995) five decision-making styles, in line with the findings of Loo (2000). Except for a negative correlation between the Rational and the Avoidant, the pattern of intercorrelations between the five styles are in line with the patterns reported by Scott and Bruce (1995) and "support their conclusion that the styles are not mutually exclusive" (Thunholm, 2002, p. 940). This study also supports the study of Driver, Brousseau, and Hunsaker (1993) that an individual tends to use more than one decision-making style even thought one style can be dominant.

Multiple regression was used to show the relationship between decision-making style and both action control and self-esteem, but not with educative ability. "The fact that the squared semi partial correlation coefficients generally were quite low indicate that self-esteem and self-regulation has a limited but still substantial value as predictors of decision-making style" (Thunholm, 2004, p. 941). As proposed by Driver et al. (1993) and Scott and Bruce (1995), "habit (and situational factors) probably plays a substantial role

as a predictor of individual decision-making behavior" (p. 941).

Thunholm's (2004) findings implicate that decision-making style should not "be viewed merely as a habit based propensity to respond in a certain way in a specific decision-making situation" as proposed by Scott and Bruce (1995, p. 941). Decision-making style involves processing practices, and this is referred to as cognitive style in decision-making. Basic self-evaluation and general ability to initiate and maintain intentions are also part of the decision-making style (p. 941).

Based on past studies and this study, Thunholm defines decision-making style as:

> The response pattern exhibited by an individual in a decision-making situation. This response pattern is determined by the decision-making situation, the decision-making task and by the individual decision maker. Individual difference between decision makers include difference in habit but also differences in basic cognitive abilities such as information processing, self-evaluation and self-regulation, which have a consistent impact on the response pattern across different decision-making tasks and situations. (p. 941)

Ways of Knowing

The concept of "ways of knowing" refers to the modes of thinking in which people construct or adopt one or more ways of obtaining, reflecting on, evaluating, and communicating

knowledge" (Galotti et al., 1999, p. 748). The concept makes a distinction between two kinds of knowing or of relating to knowledge (Belenky et al., 1986/1997). These are connected knowing and separate knowing. "Connected and separate knowing represent different kinds of cognitive or learning styles, not intellectual abilities, or capacities" (Galotti et al., 2001, p. 423).

Connected knowers are compassionate learners. Their way of sensitive knowing "involves 'walking a mile in the shoes' of a position or piece of work that one initially find alien" (Galotti et al., 1999, p. 747). Even if they do not agree with an idea, connected knowers will "connect" themselves with someone else's position in order to try to understand another person's idea rather start trying to evaluate that idea (p 747). Research has reported that women are more apt to be connected knowers than men (Gilligan, 1989; Lyons 1983). Women tend to be more compassionate then men and make moral judgements with care and justice approaches to moral reasoning (Gilligan, 1982; Galotti et al., 2001).

Separate knowers, on the other hand, try to detach themselves from any personal feelings (Clinchy, 1990). They wish to keep their distance from any decision they need to

make or to analyze Separate knowers take

> An impersonal stance. She follows certain rules or procedures that will ensure that her judgements are unbiased. All our various disciplines and vocations have these impersonal procedures of analyzing things. (Clinchy, 1989, p. 650)

There may be "at least some relationship between gender and one's predominant ways of knowing" (Galotti et, al., 1999, p. 747). Using a sample composed of mostly males, Perry (1970, 1981) did not find any evidence of connected knowing approach to knowledge. However, Belenky et al. (1986) found that the connected way of knowing was common among the women in her study. In a longitudinal study, Magolda (1992) found a variety of reasoning patterns in male and female college students.

Game of Magic Study

A study using the game of Magic: The Gathering was conducted to examine how separate and connected knowers functioned differently in an actual episode of learning (Galotti et al., 2001, p. 423). The game is a commercially available fantasy card game that "stimulates a learning environment in which other learners can be seen either as adversaries playing a game, or partners in learning" (p. 423). The Attitudes Toward Thinking and Learning Survey (ATTLS) was used to measure the participants' way of

knowing.

The results from the Game of Magic study using the ATTLS revealed that attitudinal and behavioral measures provided strong validation of the connected knowing and separate knowing scores. Connected knowing scores showed a significant and fairly strong correlation toward observable behaviors and with certain attitudes toward learning. Connected knowers saw their partners "as being more willing to build on one another's ideas" (Galotti et al., 2001, p. 434). They were also less argumentative and more interested in their partners than those with higher separate knowing scores. These results are consistent with the description of connected knowing "as being about attempting to understand another's viewpoint and to collaborate in learning, rather than to adopt an 'adversarial stance' while acquiring new knowledge" (p. 434). Separate knowers showed fewer correlations with the attitudinal rating but showed a tendency to critically evaluate their partners. Players with higher separate knowing scores "did not report themselves as being more likely to challenge or to argue; nor were they seen this way by raters" (p. 434).

Workforce Oklahoma Study

Sanders (2008) conducted a survey using ATTLS to learn

the ways of knowing for customers of Workforce Oklahoma, a One-Stop Career Center. Data were collected from 250 customers at the center. "A typical workforce Oklahoma customers was a single, 38 year-old minority. Slightly over half (53.75%) of the participants were females, and nearly 60% had some college training" (p. 165).

Sanders (2008) used the Attitudes Toward Thinking and Learning Survey (ATTLS) to measure ways of knowing. With factor analysis, he found that "the ways of knowing factor structure is more complex than that proposed by the authors of the Attitudes Toward Thinking and Learning Survey" (p. 183). While the ATTLS is described as consisting of the two broad concepts of connected knowing and separate knowing (Galotti et al., 1999), Sanders (2008) found "each of these components can be broken down into constructs to further describe the components in greater detail" (p. 183).

Connected knowing consists of the three constructs of Understanding Individual Differences, Thinking Like Others, and Empathizing with Others (Sanders, 2008, p. 183). As a result,

> Connected knowing involves a complicated process that is more than just "'walking a mile in the shoes' of a position or piece of work that one may initially find alien" (p. 747). First, it involves an understanding of the diversity that exists among

> people and that makes human interactions so rich. In addition, it goes beyond just understanding; it also includes the cognitive process of thinking like others who differ from you. Finally, it moves beyond this logical process to an emotional one that involves empathizing with others. Thus, connected knowing involves a holistic and reflective process of understanding others, thinking about these differences, and then mentally reaching out to others. (pp. 183-184)

Separate knowing is made up of the two separate constructs of Probing for Weaknesses and Remaining Objective (Sanders, 2008, p. 184). Both of these involve objective analysis and rigorously excluding one's feelings from the evaluation of an idea. These constructs involve

> The systematic analysis of an argument or idea. An important part of this systematic process is maintaining one's objectivity. Thus, emotional factors are separated from logical ones, and these emotional factors are eliminated from the process of constructing knowledge. (p. 184)

Sanders (2008) also explored for differences due to personal and educational demographic variables and concluded that "Workforce Oklahoma clients are diverse in their ways of knowing" (p. 173) and that "ways of knowing are not greatly influenced by the demographic variables" (p. 173) that he used in his study. "While a small significant difference was found due to gender, it was not large enough to have practical significance" (p. 167). Thus, while studies in the last quarter of the 20th Century found

differences in ways of knowing related to gender, Sanders found in this recent study that "there are no practical differences due to gender or other demographic variables for the ways of knowing of Workforce Oklahoma clients" (p. 186)

Sanders (2008) also used cluster analysis to explore for naturally-occurring groups among the clients at Workforce Oklahoma based on their ways of knowing. Using the items of the ATTLS as the variables, he found three distinct groups. He then used discriminant analysis to name these groups.

> The groups were as follows: (a) the Let's Debate group of 60 that slightly agree with intellectual debate, (b) the Let's Talk group of 88 that slightly disagree with intellectual debate but somewhat agree with interacting with others, and (c) the Let's Be Open group of 107 that slightly disagree with intellectual debate and is neutral on interacting with others. (p. 172)

Thus, the most recent study on ways of knowing found evidence that supported the concept of ways of knowing but that also challenged some of the assumptions and past research about differences in ways of knowing due to gender. These findings expanded the description of the concept for each of the components of ways of knowing and identified groups based on the member's way of knowing. These findings also led to the conclusion that people "cannot be

stereotyped by demographic variables for their preference for ways of knowing" (p. 185).

CHAPTER 3

METHODOLOGY

Design

This study used a descriptive research design. This research method answers questions concerning participants' current status, and it reports "the way things are" (Gay & Airasian, 2000, p. 275). Descriptive research is often referred to as survey research (p. 275). "A survey is an attempt to collect data from a member of a population in order to determine the current status of that population with respect to one or more variables" (p. 629).

This study described four elements of cognitive styles. These were the decision-making styles, ways of knowing approvals, learning strategy preferences, and multicultural awareness levels of the National Academic Advising Association members. This description was based on self-report information from a survey administered online to the National Academic Advisors members which required them to report demographic information and responses related to their cognitive styles.

Population and Sample

A population is a group that has the same characteristics in which the researchers would like the

results of a study to be generalizable (Gay & Airasian, 2000, p. 121). The target population of this study was the members of the National Academic Advising Association (NACADA). This population has:

> Over 10,000 members representing all 50 states, Puerto Rico, Canada and several other international countries. Members represent higher education institutions across the spectrum of Carnegie classifications and include professional advisors/counselors, faculty, administrators and students whose responsibilities include academic advising. (NACADA, n.d., About Us page)

Information was gathered from NACADA members by means of a survey posted on the association's website and by e-mails requests to members attending the 2008 national conference. These requests asked members to voluntarily participate in the study. Thus, the population for the study was NACADA members who were willing to volunteer for participation based on a request posted on the association's website or based on attending the 2008 national conference.

A sample is a number of people chosen from a target population so that they portray the characteristics of the target population (Gay & Airasian, 2000, p. 123). There are several ways of getting samples. In probability sampling, "all members of the population have some chance of being included in the sample" (Wiersma & Jurs, 2005, p. 295), and

"it is possible for the researcher to specify the probability, or chance, that each member of a defined population will be selected for the sample" (Gay & Airasian, 2000, p. 123). While "random sampling is the best single way to obtain a representative sample" (p. 124), "we sometimes have to compromise the ideal for the real and do what is feasible" (p. 123). This may result in using nonrandom samples, which are also called nonprobability samples and which "are sampling methods that do not have random sampling at any stage of sample selection" (p. 137). Nonprobability sampling is used because probability sampling "is not appropriate or feasible in all educational research situations, for any of a number of reasons, both practical and conceptual" (Wiersma & Jurs, 2005, p. 311).

Because participants in the study were solicited from the NACADA website, the sample was a nonprobability, volunteer sample. However, since "a good sample is one that is representative of the population from which is was selected" (Gay & Airasian, 2000, p. 123), demographic data were gathered related to the personal and professional characteristics of the participants so that the profile of the sample could be compared to the overall demographics for the NACADA to assess the representativeness of the sample.

Based on the membership size of NACADA of approximately 10,000, a sample size of approximately 370 participants was needed for an adequate sample for the study (p. 135). The actual sample was 360.

Decision-Making Style

The General Decision-Making Styles (GDMS) survey was developed by Susanne Scott and Reginald Bruce (1995) to provide researchers with "a generally available, psychometrically sound instrument for measuring decision-making style" (p. 819). The GDMS uses a Likert-type scale. A Likert scale is a scale that asks individuals to "provide a self-report along a continuum of choices" (Gay & Airasian, 2000, p. 156). "Each response is associated with a point value, and an individual's score is determined by summing the point value of each statement" (p. 156). The GDMS is a 25-item survey that uses a 5-point Likert-type scale that ranges from 1 to 5. The choices are 1--Strongly Disagree, 2--Somewhat Disagree, 3--Neither Agree Nor Disagree, 4--Somewhat Agree, and 5--Strongly Agree.

The GDMS identifies five different decision making-styles. These five styles are Rational, Intuitive, Dependent, Avoidant, and Spontaneous (Scott & Bruce, 1995). Each scale consists of five items that are representative of

the five independent dimensions of decision-making style. The scores on each of the 5-item scales can range from 5 to 25. The scale on which a respondent scores the highest of the five represents the respondent's primary decision-making style. The second highest score represents the respondent's backup decision-making style, and the lowest score represents the decision-making style least associated with the respondent.

As with any instrument, validity is the most important characteristic a measuring instrument can possess (Gay & Airasian, 2000, p. 161). Validity is "the degree to which a test measures what it is supposed to measure" (Gay, 1987, p. 128). There are three important types of validity: construct validity, content validity, and criterion-related validity.

The most important form of validity is construct validity (Gay & Airasian, 2000, p. 167). Construct validity underlies the theory of the instrument. Construct validity is "the degree to which a test measures an intended hypothetical construct. A construct is a non-observable trait, such as intelligence, which explains behavior" (Gay, 1987, p. 131). For the GDMS, the hypothetical construct is decision-making styles.

GDMS's construct validity was established through

reviewing the literature related to decision making (Scott & Bruce, 1995, pp. 819-820) and by writing items in behavioral terms based on the definitions of styles in that literature (p. 821). These items were then tested and refined with four separate samples that totaled 1,943 participants. "Factor analysis (principal axis factoring with Varimax rotation) was used to assess the dimensionality of the decision-making style instrument" (p. 823) that was developed in this process. Factor analyses "is a way to take a large number of variables and group them into a smaller number of clusters called factors" (Gay & Airasian, 2000, pp. 335-336).

Content validity is "the degree to which a test measures an intended content area" (Gay & Airasian, 2000, p. 163). Content validity involves item validity and sampling validity. Item validity deals with whether the test items measure the intended content area. To establish content validity, "all possible decision-making style types were identified from the literature, and items were written specifically to tap behaviors that prior literature suggested would indicate a particular style" (Scott & Bruce, 1995, p. 827). These items were then judged by independent researchers to have face validity and logical content validity (p. 827).

Criterion-related validity involves correlating one measure with another measure (Gay & Airasian, 2000, p. 164). There are two forms of criterion-related validity, concurrent and predictive. "Concurrent validity is the degree to which the scores on two tests taken at about the same time are correlated, and predicative validity is the degree to which the scores on two tests taken at different times are correlated" (p. 164). Scott and Bruce (1995) used the concurrent validity type of criterion-related validity for the GDMS. For this, "analyses of variance were used to compare the mean scores for each scale across samples" (p. 827) in their four groups of 1,943 participants.

Reliability is "the degree to which a test consistently measures whatever it is measuring" (Gay, Mills, & Airasian, 2006, p. 139). It is the "dependability" or "trustworthiness" when describing a measurement (p. 139). It is important to remember that a "valid test is always reliable, but a reliable test is not always valid" (p. 139.) Reliability has two basic forms of testing, test-retest reliability (stability) and internal consistency reliability (Gay & Airasian, 2000, p. 171). Test-retest is "the degree to which scores on the same test are consistent over time" (p. 171). Internal consistency reliability is a reliability

test that takes one test at a time to confirm consistency. (p. 173). Using the Cronbach's alpha (internal consistency test), Scott and Bruce (1995) judged that the GDMS was a reliable instrument. The Cronbach's alphas for the five sections of the GDMS ranged from .68% to .94%.

Ways of Knowing

The ways of knowing preferences of the members of NACADA was identified by the Attitudes Toward Thinking and Learning Survey (ATTLS). The ATTLS is a 20-item instrument that measures a person's way of knowing learning strategy (Galotti et al., 1999). The instrument has two scales with 10 items each. These scales are Separate Knowing and Connected Knowing. The items in the Separate Knowing scale involve "objective, analytical, detached evaluation of an argument or piece of work" (p. 746). Separate Knowing also measures a critical and detached way of knowing (p. 745). Items for the Connected Knowing scale involve a person understanding the other's persons point of view by "placing themselves in alliance with another person's position" (p. 746); thus it measures an empathic way of knowing.

ATTLS is an instrument that is easily administered. Depending on one's reading level, the ATTLS can be completed in a few minutes. It is a summated-rating scale that uses a

7-point Likert-type scale. The options on the scale are as follows: 1-Strongly Disagree, 2-Somewhat Disagree, 3-Slightly Disagree, 4-Neither Agree nor Disagree, 5-Sightly Agree, 6-Somewhat Agree, and 7-Strongly Agree. The scores on each of the 10-item scales of Separate Knowing and Connected Knowing can range from 10 to 70 "with high scores indicating strong agreement with that style of knowing" (Galotti et al., 1999, p. 750).

The construct validity of the ATTLS was based on "the original papers on Women's Ways of Knowing (Belenkey et al., 1986; & Clinchy, 1989, 1990), and studying parts of quotations or descriptions presented there" (Galotti et al., 1999, p. 749). Items created through this process were then tested and refined after use in the author's college classes. The concepts of connecting knowing and separate knowing were based on the work of others who had also developed a written instrument to measure these concepts. Knight, Elfenbein, and Messian developed a valid instrument to measure separate and connected knowing. They tested and validated their instrument on three samples; one of the samples included values. They found acceptable internal and stability-over-time reliability for both scales and conducted a factor analysis with the separate knowing and

connected knowing items loading on separate factors (pp. 748-749). Thus, while ATTLS differed from the previous attempts, it was modeled on previous attempts to develop an instrument to measure separate knowing and connected knowing (pp. 748-749).

Content validity was established by 383 participants that were students at a Midwestern liberal arts college (Galotti et al., 1999, pp. 749-750). Each participate was recruited by student experimenters and participated on a voluntary basis (p. 750). Of the 383 participants, there were 201 women and 182 men. The racial distribution for the college where the data were collected was as follows: 83% white, 8.5% Asian American, 5% Latino/Latina, 3% African-American, and .5% Native American. Data were gathered in four groups, but each member only participated in one of the four groups. Each group completed a 50-item version of the instrument with 25 items for each scale. Modifications were made in the instrument after its first field testing with 128 participants. The same version of the instrument was completed by the other 255 participants, and a factor analysis with a varimax rotation was preformed on their responses. Using a cutoff value of .45 for the factor loadings, this analysis produced two factors. The Connected

Knowing factor included 13 items while the Separate Knowing factor included 14 items (p. 751). In order to shorten the instrument, the authors "selected 10 SK [Separate Knowing] items and 10 CK [Connected Knowing] items, those that showed the most consistently high loadings on the two factors extracted" (p. 753).

Reliability for ATTLS was established by measuring the internal consistency of the 2 new 10-item scales. The coefficient alphas for these scales were as follows: Connected Knowing .83 and Separate Knowing, .78 (p. 753).

Learning Strategy Preferences

The learning strategy preferences of the members of the NACADA were identified with Assessing The Learning Strategies of AdultS (ATLAS). ATLAS is an instrument designed to quickly identify learning strategies and utilizes a flow-chart design (Conti, 2009, p. 889). In its original and most widely used format;

> ATLAS is a 8.5" x 5.5" bound booklet with each item on a separate page and with each option for an item having a box which directs the respondent to the next appropriate action. Each page of this self-contained booklet is printed on a different colored card stock, and after selecting an option for an item, the participant is instructed to go to the appropriately colored page. (p. 889)

Each response leads the participants to eventually

discovering their learning strategy preference group of either Navigator, Problem Solver, or Engager. ATLAS can be completed in approximately 1 to 3 minutes, depending on one's reading level (p. 889).

ATLAS is a valid instrument for measuring the learning strategy preference of adults (Conti, 2009, p. 889). Three logical and empirical analysis were used to establish construct validity (p. 889). First, ATLAS was derived from the research findings of the Self-Knowledge Inventory of Lifelong Learning Strategies (SKILLS). As a result, ATLAS's construct validity was based on the testing of SKILLS (p. 889). Second, "results for the numerous research studies using SKILLS were synthesized and consolidated" (p. 889). Third, "cluster analysis was used to identify the naturally-occurring groups inherent in the data" (p. 889).

Construct validity for ATLAS was established by synthesizing "the results of numerous research studies using SKILLS to consolidate these results" (Conti & Kolody, 1999, p. 16). Thus, "the construct validity of ATLAS was established by reviewing the literature of studies actually using SKILLS in field-based research and by consolidating the similar data from many studies" (p.17). Most of these studies were established and coordinated at the Center for

Adult Learning Research at Montana State University (Conti, 2009, p. 889). Other studies involved diverse populations in various states and Canada. These diverse populations came from other areas than education, such as, business communities, tribal communities, military, public school administration, students concurrently enrolled in high schools and colleges, older adults, and volunteer leadership (p. 889-890). This diverse population collectively "produced a data set of 3,070 cases in which the data were in similar form" (p. 890).

> Studies coordinated through the Center for Adult Learning Research utilized a similar research design which was recommended by the staff at the Center. This design consisted of describing the learning strategy profile of the participants, conducting discriminant analysis to determine if the respondents differed in learning strategy usage in any way on selected demographic variables, and conducting cluster analysis to uncover inherent learning strategy groupings within the sample. Several of the studies involved interviews and focus groups with the various cluster grouping to elicit qualitative data better describe the groupings. (p. 890)

Cluster analysis was run to explore naturally-occurring groups of learners by using the various studies and very different populations from SKILLS research (Conti, 2009, p. 891). These various studies showed different numbers of clusters: Five clusters; Gehring, Hays, Kolody, Strakal, and

Ungrich; four clusters Bighorn, Courtnage, Korinek, and Lockwood; and three clusters study by Conti, Kolody, and Schneider (p. 891). Because of these conflicting results, "a cluster analysis of the aggregate data set of 3,070 was conducted to uncover the hypothetical constructs in the data and to define the learning strategy groupings actually in the data. The results of this analysis revealed three distinct clusters" (p. 891).

Discriminant analyses were run on the 5-cluster, 4-cluster, and 3-cluster that were defined in the cluster analysis by using the Quick Cluster Program of SPSS. The discriminating variables were the 60 items from SKILLS (Conti, 2009, p. 891). The correct placement percentage for these analysis differed and were as follows: five cluster–62.5%, four clusters–73.9%, and three clusters–96.1% (p. 891). Since' ATLAS concern is with the correct placement of respondents in the groups formed by SKILLS and "because it is much more accurate than the other two solutions, the 3-cluster solution was selected to serve as the conceptual basis for ATLAS" (p. 891). Since these three groups were similar to other groups in the various studies, these groups were named Navigators, Problem Solvers, and Engagers. Distribution of each was as follows: Navigators-1,121

(36.5%), Problem Solver-973 (31.7%), and Engagers-976 (31.8%).

Content validity for ATLAS "is concerned with the degree to which the items are representative of learning strategy characteristics of the three groups identified in the SKILLS' research" (Conti, 2009, p. 891). The content validity of ATLAS was established by using discriminant analysis to identify the process that separated the three groups created in the cluster analysis and then used the results of these analyses to construct the items for the instrument. As series of discriminant analyses were conducted to simultaneously to examine all 60 items in SKILL to determine the difference between each group (p. 891). "By using the various clusters as the groups and by using the variables from the cluster analysis as the set of discriminating variables, an analysis can be generated which produces a structure matrix which describes the process that separates the various clusters into distinct groups" (Conti, 1996, p. 71). Thus, after conducting several separate discriminant analyses, the findings from each of the structure matrix for each discriminant analysis were used to determine the wording of the items in ATLAS (Conti, 2009, p. 891).

"The structure matrix of the discriminant analysis for the three groups of Navigators, Problem Solvers, and Engagers revealed that the major process that separated the groups related to how each groups sought to accomplish the learning task" (Conti, 2009, p. 891). Naviagators and Problem Solvers initiate a learning task by looking at the resources they need for the learning while the Engager consider if the learning task is worth doing. The discriminant analysis that uncovered this process was 96.1% accurate in discriminating between the Navigator and Problem Solver in one group and the Engagers in the other (p. 892). When the Navigator and Problem Solver were examined to see what differentiated them, the discriminant analysis, which was 98.3% accurate, revealed that the Navigator focused on attention and planning while the Problem solver utilized generating alternatives (p. 892).

Since ATLAS only produced three clusters while most previous research found either four or five clusters, "additional cluster and discriminant analyses were performed to investigate the structure of each of the three preference groups" (p. 892). The results to these analyses showed that each of the three learning preference groups contain two subgroups.

> Therefore, items, which were based on the structure matrix from the discriminant analysis, were written for each group to provide participants with additional insights about their tendencies within their overall learning strategy group preference. The accuracy rates for placing participants in their correct group are lower for the subgroups than are the accuracy rates for the overall group placement indicating that the subgroup information is not as stable as that of the overall group placement. (p. 892)

The criterion-related validity of ATLAS was established in three separate ways (Conti, 2009, p. 892). First, the group placement on ATLAS was compared to the scores on SKILLS. For the 40 professionals who participated in this analysis, 80% of their scores on SKILLS were consistent with their ATLAS preference group placement (p. 892). Second, participants responded to a modified version of SKILLS that contained only the learning strategies that influenced the discriminant analyses used to form the ATLAS groups. "The 154 participants' selections for the various items were 75.7% as expected for their learning strategy preference group" (p. 893). Third, self-report data were gathered on the accuracy of the ATLAS placement for the participants after they had read a description of the ATLAS groups. "Overall, 92.1% of the 2,938 participants in these studies agreed that the group in which ATLAS placed them was an accurate description of them" (p. 893).

> Because of the consistency between scores on SKILLS for the learning strategies used to create ATLAS and ATLAS group placement, because of the expected responses based on ATLAS groupings on approximately three-fourths of the items in modified SKILLS scenarios, and because of the extremely high testimony by respondents of the accuracy of the group placement by ATLAS, it was judged that ATLAS has criterion-related validity. (p. 893)

ATLAS' reliability was established by the test-retest method (Conti, 2009, p. 893). ATLAS was taken by 121 adult education practitioners with a 2-week interval. "The coefficient of stability for these two testings was .88 ($p<.001$) with 110 (90.9%) responding the same on both testings" (p. 893).

Cultural Appreciation

The Cultural Appreciation in Lifelong Learning (CALL) was used to identify the perspectives of cultural awareness of the members of NACADA. The "design and development procedure [for CALL] was patterned after that of Assessing The Learning Strategies of AdultS" (Tapp, 2002, p. 170). Like ATLAS, CALL uses a flow chart design to identify four groups. These groups are Chris, Alex, Lee, and Lynn. "The first initials of each group combines to form the word CALL" (p. 179). Those in the Chris and Alex groups recognize "inherent social forces oppressing people in marginalized populations" (p. 171). They look externally at society and

recognize oppressive forces that are firmly established in society (p. 172). Those in the Lee and Lynn groups look internally to the individual (p. 172). They "view oppressive forces as influences or actions that one person exercises over another person" (p. 172). Those in the Chris and Alex groups scored higher on the items used to create CALL than the Lee and Lynn groups.

The groups in descending order of their degree of appreciation for cultural diversity are as follows: Chris, Alex, Lee, and Lynn (pp. 171-181). Those in the Chris groups enthusiastically embrace cultural diversity and "feel that societal forces are firmly established that are often repressive to culturally divers groups" (p. 179). Those in the Alex group appreciate cultural diversity and "feel that societal forces have greatly impacted and have limited opportunities for culturally diverse groups" (p. 180). Those in the Lee group do not eagerly embrace cultural diversity and "believe that the individual rather than societal forces is the major factor influencing a person's social situation" (p. 180). Those in the Lynn group are opposed to cultural diversity and "strongly believe that the individual rather than societal forces is the major factor influencing a person's social situation" (p. 180).

Similar to ATLAS after which CALL was designed, "the construct validity of the Cultural Appreciation in Lifelong Learning instrument rests in the validity of the 62 items in the Multicultural Counseling Knowledge and Awareness Scale and the Quick Discrimination Index" (Tapp, 2002, p. 135) that were used to create CALL. Both of these instruments have their validity reported in various published articles. The analysis of the demographic data for the group of 768 social workers at the Oklahoma Department of Human Services (DHS) who participated in the study that created CALL and the analysis of the demographic data and its relationship to the two instruments "indicate that these instruments are appropriate for measuring cultural competency for social workers" (pp. 135-136). In addition, the factor analyses that were done with the responses of the DHS group for each of these instruments "confirm that they are measuring cultural competency in the same way for social workers as for the other groups with whom the instruments have been tested" (p. 136).

The second step in establishing the construct validity of CALL was to identify the various groups of cultural awareness within the 768 DHS respondents (Tapp, 2002, p. 136). Using cluster analysis, four distinct groups of

relatively equal size were identified. The purpose of CALL is to place respondents in one of these four groups (p. 137).

The content validity of CALL was established by using discriminant analysis to identify the process that separated the groups created in the cluster analysis and to then use the results of these analyses to construct the items for the instrument. Several 2-group discriminant analyses were conducted, and the results of each analysis were used to write one of the items in CALL (Tapp, 2002, pp. 139-140). Each of these analyses used the groups from the cluster analysis and the 62 items from the instruments for the discriminating variables. The first discriminant analysis was at the 2-cluster level. It found that "the groups differed in their overall view of social responsibility. The higher scoring group perceived diversity issues as related to societal causes. The lower scoring group perceived diversity issues as individualistic" (p. 144).

Since each of these two clusters divided into two other clusters, "two separate two-group discriminant analyses were conducted with the groups at the four-cluster stage of the cluster analysis" (Tapp, 2002, p. 145). For the group that felt diversity issues were related to societal causes, "the

higher-scoring group viewed traditional values as limiting multicultural groups while the lower-scoring group viewed traditional values as being somewhat useful to multicultural groups" (p. 146). For the group that felt diversity issues were individualistic, "the higher scoring of the two groups acknowledged a lack of knowledge concerning cultural diversity, [while] the lower scoring group had some knowledge but has selected not to support cultural diversity" (p. 147).

The criterion-related validity of CALL was established by having 100 vocational rehabilitation workers complete CALL and the items that were used to form the items in CALL (Tapp, 2002, pp. 150-160). The responses on CALL and the items were then compared. Several analyses were conducted to compare the vocational rehabilitation group with the DHS social worker group, and the results of these analyses indicated that they were equivalent groups (p. 160). The participants were also provided feedback on their group placement and asked to judge how accurate CALL was in describing them; 69% felt that CALL accurately described them. However, there was a significant difference among those who felt that CALL did not accurately describe them with a larger group than expected in the Lee and Lynn groups

feeling that CALL was not accurate in its description of them (p. 159). Based on these analyses, "CALL was judged to have criterion-related validity" (p. 160).

The reliability of CALL was established with the test-retest method (Tapp, 2002, p. 162). CALL was administered to 22 graduate students at Oklahoma State University with a 3-week interval. The correlation for the two testings was .86.

Procedures

The data for this study were collected by posting a link to the surveys on selected parts of the National Academic Advising Association's (NACADA) website and by requesting participation from NACADA members who attended the 2008 national conference. The guidelines for conducting a survey on NACADA's data base are posted on the NACADA's web-site (NACADA, Survey Guidelines).

In order to use the website, a researcher must first secure the approval of an NACADA organizational unit (Commission, Interest Group or Region). These organizational units then must receive clearance from Charlie Nutt, NACADA Executive Director, prior to developing a survey. This requires the submission of a "50-100 word statement of purpose along with survey topics, sample questions, whether

human subject IRB review will be needed, and anticipated survey dates to Charlie Nutt to begin the survey development approval process" (NACADA, Survey Guidelines,). Once the development clearance has been approved, the researcher has to contact Marsha Miller, NACADA Assistant Director, Resources and Services, to discuss the survey and the survey design (NACADA, Survey Guidelines). NACADA also requires certain demographic questions be included in any research on the website. This was done to conform to the existing NACADA demographic guidelines. The following demographics variables are required: commissions/interest groups, regions, roles, and institution types (NACADA, Survey Guidelines). Once the survey has been designed, it must be submitted for final clearance (NACADA, Survey Guidelines).

After clearance was approved by the appropriate administrators, then research is allowed to pick three Commissions Groups to post the survey. For this study, the following groups were selected based upon their relevancy to the research topic: Advising Adult Learners Commission, Advisor Training/Development Commission, and Advising Administration Commission.

To gather the data, a "form" file was created in Front Page and posted on the website of the advisors for this

study. The form was a questionnaire that contained the Assessing The Learning Strategies of AdultS (ATLAS), the General Decision Making Styles (GDMS), The Attitudes Toward Thinking and Learning Survey (ATTLS), and Cultural Appreciation in Lifelong Learning (CALL). A link was posted on the NACADA website for the three approved commissions, and e-mail requests to participate in the study were sent to the attendees of the 2008 national conference. The request was posted on the NACADA website for 2 weeks, and no follow-up requests were made to the conference attendees. Each of the requests to participate contained a link to the website for the study. When those who were willing to participate in the study completed their responses, they clicked on a "Submit" button in the form. This sent an anonymous e-mail to the research advisor's account that contained all the responses. These responses were transferred to an Excel file. Then data were analyzed using the latest form of SPSS, which has been renamed PASW Statistics 18.

CHAPTER 4

FINDINGS

Participants

The 360 participants of the National Academic Advising Association (NACADA) that provided the data for this survey were from four different groups within the association. One group were members that attended the 2008 NACADA conference in Chicago, Illinois, in October 2008, which had 3,550 attendees. The other three groups were from commissions within the association. These were the Commission for Advising Administration with 626 members, Commission for Adult Learners with 445 members, and the Commission for Advisor Training and Development with 611 members. Two of the commissions, Adult Learners and Advisor Training and Development, were chosen because of their interest in adult learners and advisors training. The Commission for Advising Administration was chosen for the same reasons with the hope that the administrators of academic advisors would be willing to participate in the study because of the importance of understanding adult learners and of training that advisors need to meet the needs of their advisees.

In addition to the data gathered related to the cognitive style instruments, data were also collected

related to personal, professional, and institutional demographic information. The institutional variables of role in the institution, degrees offered at the institution, NACADA regions, and size of institutions are variables that NACADA requested to be included in the survey when permission was granted to use the NACADA list-serv. The personal and professional variables were included to provide information for describing the sample and because baseline data on these were available in NACADA internal reports and in a published study (Lynch & Stucky, 2000) on the demographic make-up of NACADA.

The data for the personal demographic variables of gender, age, and race are summarized in Table 1. NACADA members that participated in the study were predominantly females with over four-fifths being female (83.61%). Although this is more females than in the general population, over three-fourths (77.86%) of NACADA members are females (Lynch & Stucky, 2000; NACADA, Members Demographic Information, 2009). The age of the participants ranged from 23 to 66 with a mean of 44.8 (SD = 11.4) and a median of 46.5. Although the sample was overwhelmingly Caucasian (84.68%), this is consistent with the makeup of NACADA which is 81% Caucasian (Lynch & Stucky, 2000).

Table 1: Distribution of Personal Demographic Variables

Variable	Frequency	Percent
Gender		
Male	59	16.39
Female	301	83.61
Total	360	100.00
Age Groups		
23 to 35	92	26.59
36 to 46	81	23.41
47 to 55	99	28.61
56 to 66	74	21.39
Total	346	100.00
Race		
African-American	27	7.52
Asian/Pacific Islanders	8	2.23
Caucasian	304	84.68
Hispanic	14	3.90
Native American	1	0.28
Other	5	1.39
Total	359	100.00

The professional variables were education, advising experience, and the participant's role in the institution (see Table 2). The participants were highly educated. The sample shows a high degree of education. Most (88.6%) of the participants have a master's degrees or higher. It is not unusual that most of the advisors have advance training beyond the bachelors degree because of the job requirements for academic advising.

The participants varied greatly in their advising experience. They ranged in experience from first-year advisors to those with 40 years of experience. The average

years of advising experience was 10.7 (SD = 8) years with a median of 8 years. The experience of those in the sample is similar to that of the NACADA membership (Lynch & Stucky, 2000). Thus, although there are some minor differences in some areas the profile for the personal demographic variables, the participants in the sample were similar to the general makeup of the national organization.

The primary role of approximately half (49.72%) of the participants was direct advising of students, and about one-fourth (26.11%) were administrators in the area of advising. Throughout NACADA, 58.6% of the members are involved in directly advising students (Lynch & Stucky, 2000).

Table 2: Distribution of Professional Demographic Variables

Variable	Frequency	Percent
Education		
Less than Bachelor	2	0.56
Bachelor	39	10.83
Masters	231	64.17
Work toward Doctorate	27	7.50
Doctorate	61	16.94
Total	360	100.00
Advising Experience		
1 to 5	122	33.98
6 to 8	58	16.16
9 to 15	96	26.74
16 to 40	83	23.12
Total	359	100.00
Role in Institution		
Primary role teach/research	9	2.50
Primary role advising	179	49.72
Advising administrator	94	26.11
Administrator--Several areas	62	17.22
Graduate student	1	0.28
Supports advising	11	3.06
Affiliated university	4	1.11
Total	360	100.00

The institutional variables were the type of institution, the degrees offered at the institution, the region of NACADA in which the participant worked, and the size of the participant's institution (see Table 3). The participants were overwhelmingly (76.32%) from public institutions. About one-fifth (21.73%) were from private, non-profit institutions. Almost none (7) were from for-profit or other types of institutions. This distribution is

similar to NACADA's membership which has 74.6% of its membership at public and 2-year institutions and 79% at public research, public comprehensive, public liberal arts colleges, and 2-year colleges (Lynch & Stucky, 2000).

Although the NACADA participants represented a variety of levels of higher education, nearly two-thirds were from comprehensive universities that offered doctoral programs. About one-fourth (24.17%) were from regional-type institutions offering a bachelors and master's degree. Only about one-tenth (12.50%) were from community college level institutions.

The sample was distributed across all of the NACADA regions. Slightly over one-third (38.06%) of the participants were from the Great Lakes and the South Central regions. While this may be a result of the large populations in these areas, it may also be a result of part of the sample being drawn from participants of the national conference that was held in Chicago.

The size of the institutions at which the participants work varies greatly. Most participants reported their institution's size in round numbers, so the numbers related to the institution's size are general estimates. The institutions ranged in size from 22 to 90,000. The average

size was 19,250 (SD = 16,006), and the median size was 16,000. The grouping of the sample into quartiles reveals that institutions of all sizes were widely represented in the sample.

Table 3: Distribution of Institutional Variables

Variable	Frequency	Percent
Type of Institution		
Public	274	76.32
Private (non profit)	78	21.73
Proprietary (for profit)	6	1.67
Other	1	0.28
Total	359	100.00
Degrees Offered at Institution		
Associates degree	45	12.50
Bachelors	20	5.56
Masters	67	18.61
Specialist	7	1.94
Doctorate	220	61.11
Other	1	0.28
Total	360	100.00
NACADA Regions		
Northeast	25	6.94
Mid-Atlantic	44	12.22
Mid-South	32	8.89
Southeast	27	7.50
Great Lakes	86	23.89
North Central	25	6.94
South Central	51	14.17
Northwest	14	3.89
Pacific	21	5.83
Rocky Mountain	34	9.44
International	1	0.28
Total	360	100.00
Size of Institutions		
300 to 7,000	89	25.57
7,001 to 16,000	90	25.86

16,001 to 27,000	83	23.85
27,001 to 90,000	86	24.71
Total	348	100.00

Decision-Making Styles

By using the data collected from the General Decision-Making Styles (GDMS), a profile of the decision-making styles of the National Academic Advising Association (NACADA) members was constructed to answer the first research question in the study. For the GDMS (Scott & Bruce, 1995), five separate scores were computed for each of the 360 members of the NACADA who completed the GDMS. These scores were computed by adding the five responses for each of the five subscales in the GDMS. These subscales are Rational, Intuitive, Dependent, Avoidant, and Spontaneous (p. 820, 823). Using the Likert-type scale of 1--Strongly Disagree, 2--Somewhat Disagree, 3--Neither Agree nor Disagree, 4–Somewhat Agree, and 5–Strongly Agree, a mid-value of 3 was used for missing items so that a score could be computed for each participant. The scores in each area could range from 5 to 25 with high scores indicating support of the scale's decision making style and low indicating lack of support of the decision making style.

Two statistical procedures were conducted to investigate the fit of the GDMS for the NACADA participants. First a factor analysis was conducted to confirm if the data for the NACADA participants matched that upon which the GDMS

was developed. Then the reliability of the GDMS was checked with the NACADA participants.

Factor Analysis

Factor analysis "is a way to take a large number of variables and group them into a smaller number of clusters" (Gay & Airasian, 2000, pp. 335-336). The main purpose of factor analysis is to reduce the data collected into a manageable number of underlying variables. The technique is to reduce redundancy from a set of correlated variables. These variables represent a smaller set of derived variables or factors (Kachigan, 1982). "By clustering a large number of variables into a smaller number of homogeneous sets and creating a new variable--a factor--...we have simplified our data and consequently are more likely to gain insight into our subject matter" (p. 238).

The factor analysis was run to confirm the structure of the General Decision Making style with the National Academic Advising Association members. According to Scott and Bruce (1995), there are five factors in the GDMS. Consequently, the number of factors were held to five. The analysis with the 360 participants confirmed that there are five factors with the NACADA sample (see Table 4). All 25 items in the GDMS grouped into five clusters of five items in the same

manner as designed by Scott and Bruce.

Table 4: Factor Analysis of GDMS

Item	Factor				
	1	2	3	4	5
18	0.881	0.034	0.144	-0.080	0.038
17	0.879	0.054	0.155	-0.080	0.020
19	0.853	0.093	0.103	-0.087	0.096
20	0.821	0.019	0.185	-0.039	-0.059
16	0.804	-0.022	0.211	-0.104	0.073
6	-0.029	0.839	0.055	-0.011	0.151
7	0.011	0.820	0.075	-0.019	0.181
10	0.023	0.812	0.021	-0.023	0.099
8	-0.001	0.791	0.070	-0.065	0.119
9	0.157	0.720	-0.057	-0.174	0.117
11	0.163	0.052	0.809	-0.036	-0.113
14	0.068	0.043	0.790	0.143	0.015
12	0.114	0.068	0.779	-0.005	0.050
13	0.164	-0.012	0.778	0.030	-0.059
15	0.229	0.004	0.739	0.028	0.034
3	-0.085	-0.205	-0.007	0.824	-0.085
4	-0.041	-0.027	0.070	0.799	-0.252
2	0.008	-0.080	0.017	0.795	-0.124
1	-0.121	0.037	0.081	0.727	-0.293
5	-0.125	-0.016	0.015	0.695	0.048
22	0.065	0.135	0.001	-0.157	0.846
21	0.035	0.032	0.042	-0.152	0.835
23	-0.152	0.184	-0.107	-0.052	0.733
24	0.133	0.179	0.018	-0.253	0.719
25	0.116	0.390	-0.024	-0.048	0.602

Reliability

The internal consistency reliability of the GDMS for the 360 participants in the study was assessed with Cronbach's alpha because "researchers must also be sure to report reliability for their own research participants. Reliability, like validity, is dependent on the gorup being

tested" (Gay, Mills, & Airasian, 2006, p. 143). Cronbach's alpha estimates "internal consistency reliability by determining how all items on a test relate to all other test items and to the total test" (p. 142). Internal consistency reliability "is the extent to which items in a single test are consistent among themselves and with the test as a whole" (p. 141). For tests using a Likert-type scale such as the GDMS, the "analysis for internal consistency can be accomplished using Cronbach's alpha" (p. 142).

A Cronbach's alpha was calculated for the entire GDMS using the responses on the instrument's 25 items for the 360 academic advisors who were members of NACADA. The alpha reliability coefficient was .79 ($p < .001$). The squaring of this coefficient yields a coefficient of determination (Huck, 2004, p. 68) that indicates that it explains 62.4% of the variance in the responses. This is above the .7 range which is the minimally acceptable level for a test of this nature (Gay, 1987, p. 234); this minimum level of .7 accounts for about half of the variance in the test (Huck, 2004, p. 69).

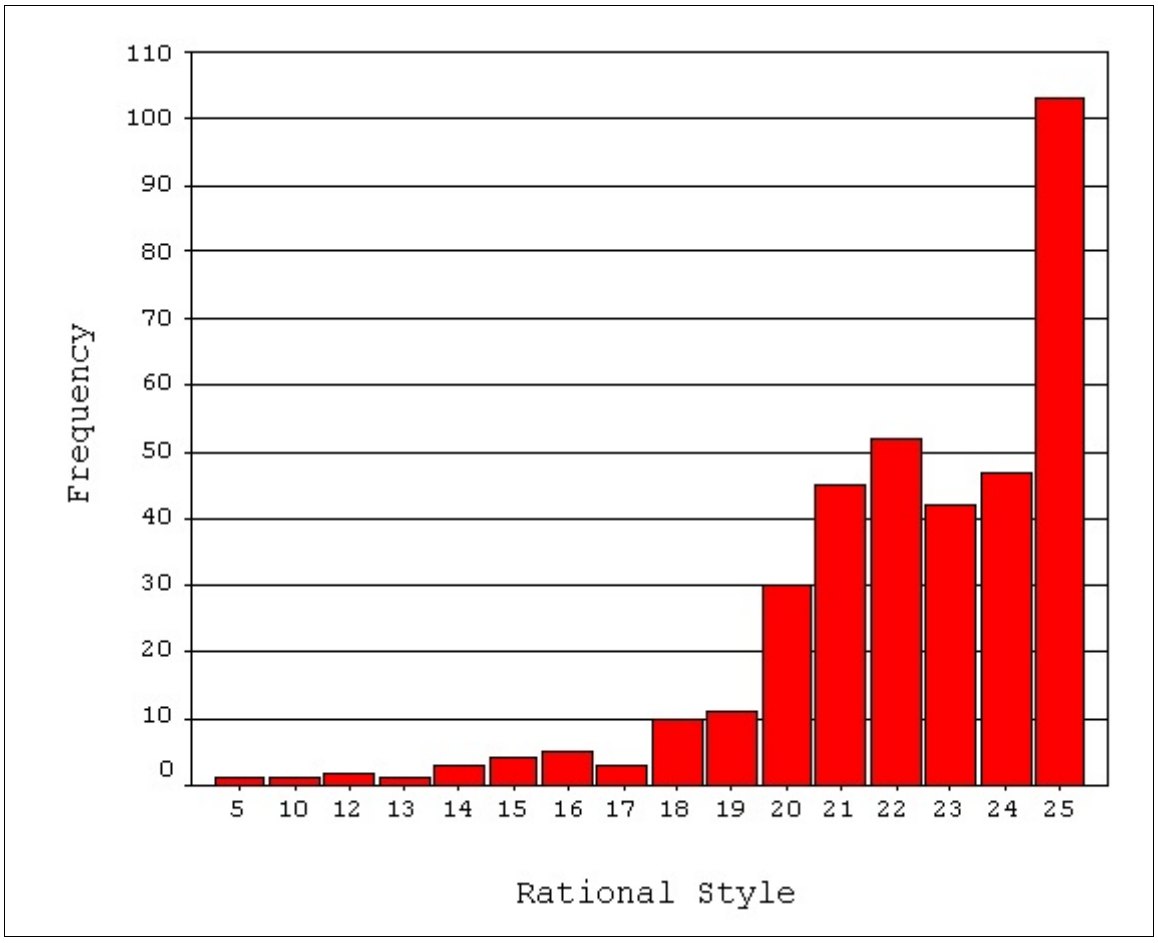
Separate Cronbach's alphas were also calculated for each of the five scales of the GDMS. Reliability is usually lower on a subtest than on the total test because it has

less items (Gay, Mills, Airasian, 2006, p. 143). However, the individual scales all had higher coefficients were higher than that for the total test. The alpha reliability coefficients were as follows: Avoidant–.92 ($p < .001$), Intuitive–.87 ($p < .001$), Rational–.85 ($p < .001$), Dependent–.85 ($p < .001$), and Spontaneous–.84 ($p < .001$). Thus, all of the reliability coefficients for the GDMS and its subscales were well above the conventional standard of .7.

Profile of Participants

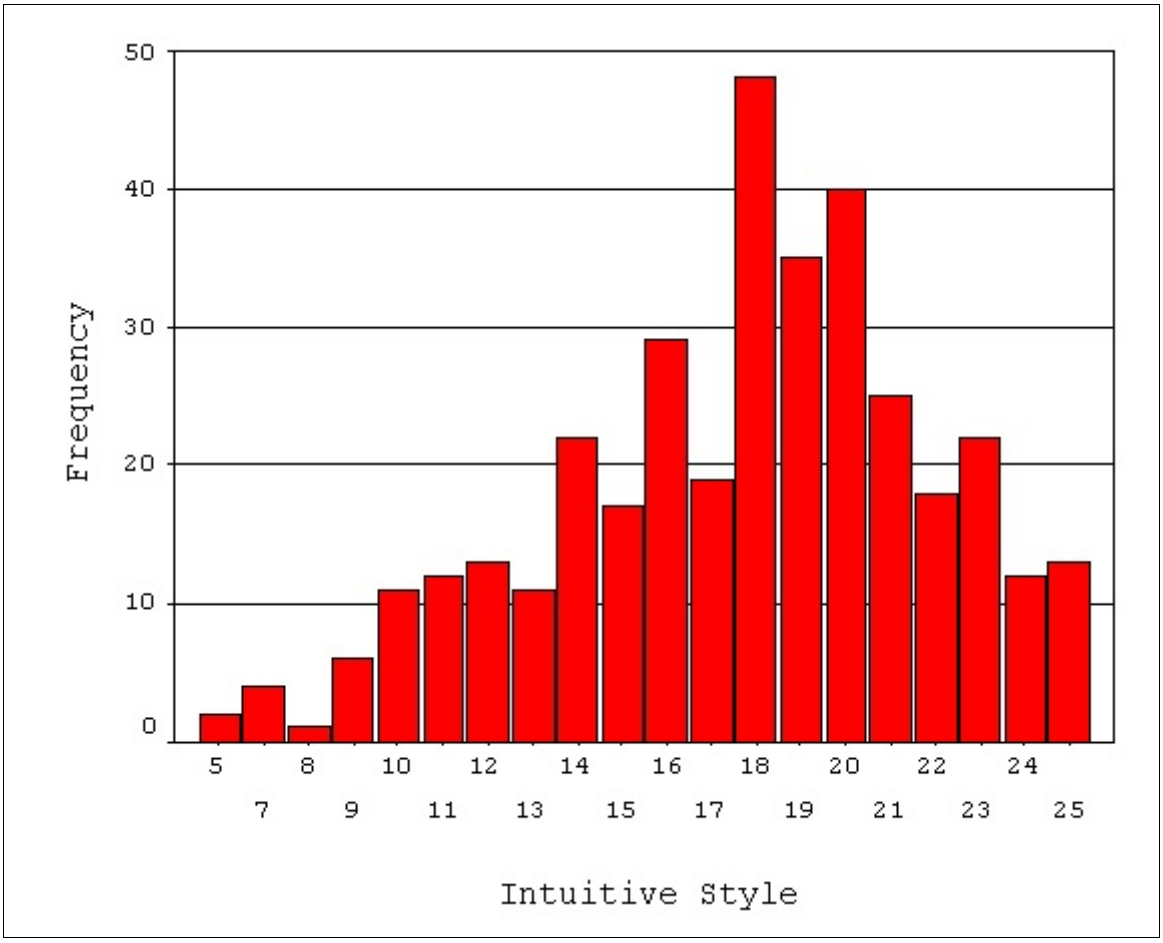
Those with a Rational decision-making style would rather approach a problem head on than to push or avoid the problem. They will research for logical alternatives to address the problem (Scott & Bruce, 1995, p. 820). With a possible range of 5 to 25 and with a midpoint of 15, the Rational scores for the NACADA members ranged from 5 to 25. The mean for the group was 22.31 with a standard deviation of 2.84. The median was 23, and the mode was 25. The distribution was skewed with most of these participates toward the high side of the scale with half of the members at 23 or above (see Figure 2).

Figure 2: Distribution of Rational Decision-Making Scores



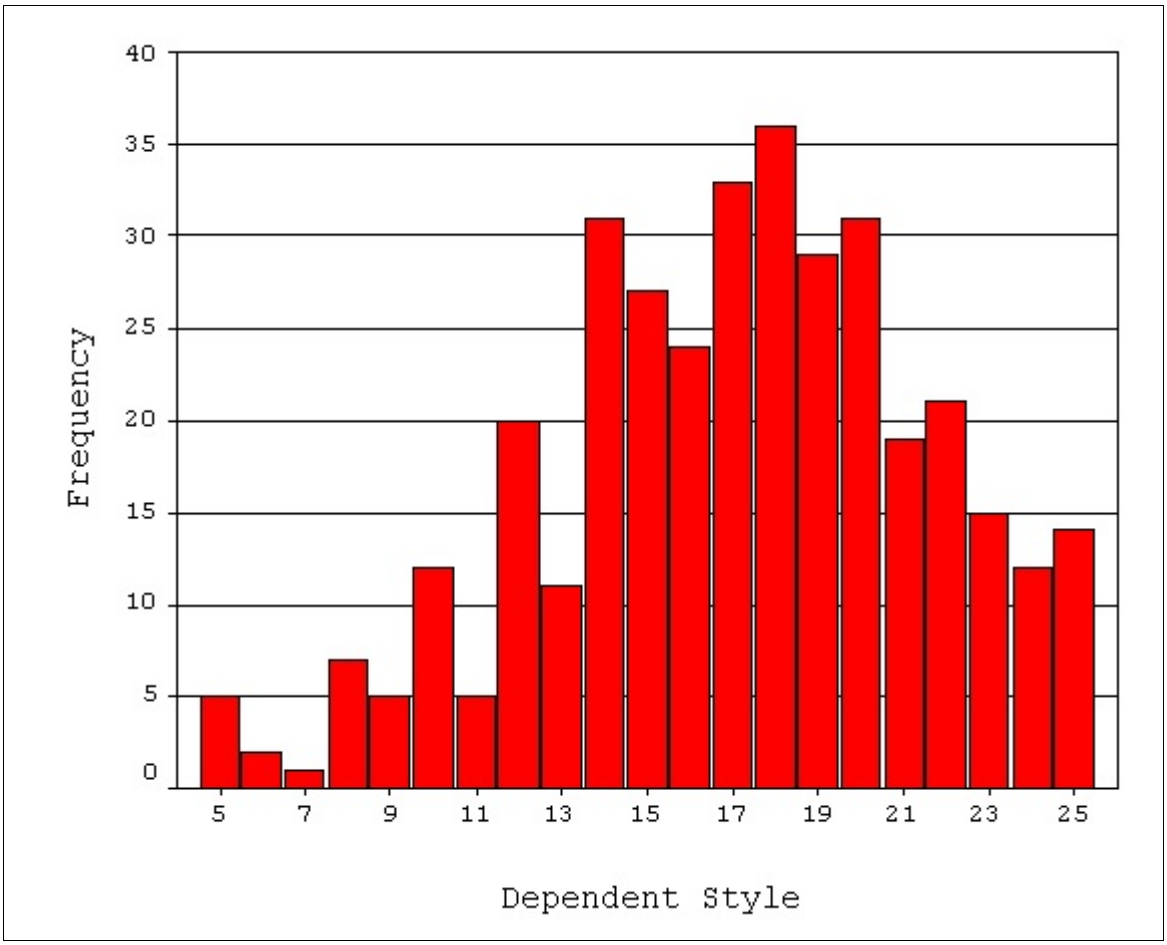
Those with an Intuitive decision making style tend to go by intuition and feelings when forming an idea for a decision (Scott & Bruce, 1995, p. 820). With a possible range of 5 to 25 and with a midpoint of 15, the Intuitive scores for the NACADA members ranged from 5 to 25. The mean for the group was 17.67 with a standard deviation of 4.21. The median was 18, and the mode was 18. The distribution was generally bell shaped; however, it leaned toward the high end of the scale and had a mid-point of 18 (see Figure 3).

Figure 3: Distribution of Intuitive Decision-Making Scores



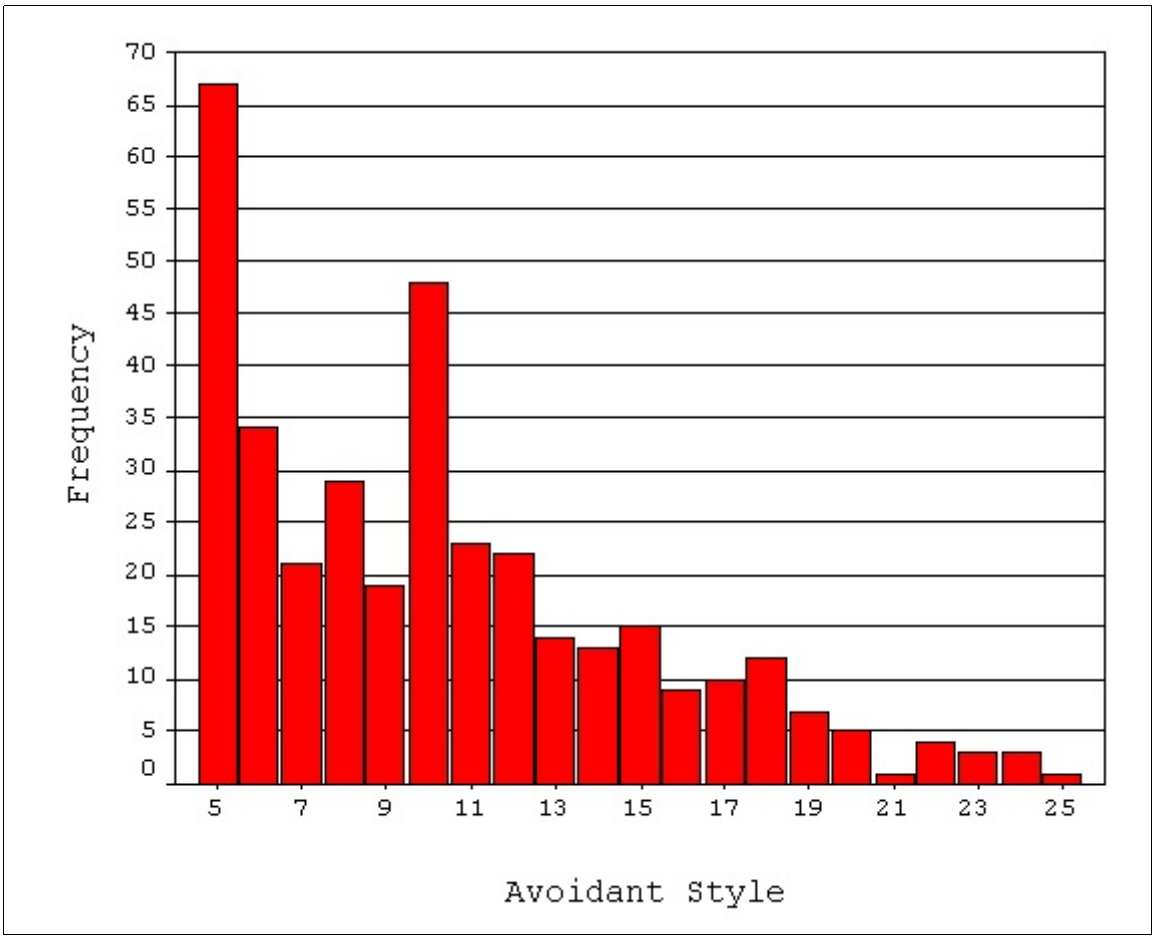
Those with a Dependent decision making style tend to rely on someone else to assist them in making their decisions (Scott & Bruce, 1995, p. 820). With a possible range of 5 to 25 and with a midpoint of 15, the Dependent scores for the NACADA members ranged from 5 to 25. The mean for the group was 17.08 with a standard deviation of 4.44. The median was 17, and the mode was 18. The distribution was generally bell shaped; however, it leaned toward the high end of the scale and with a mid-point of 17 (see Figure 4).

Figure 4: Distribution of Dependent Decision-Making Scores



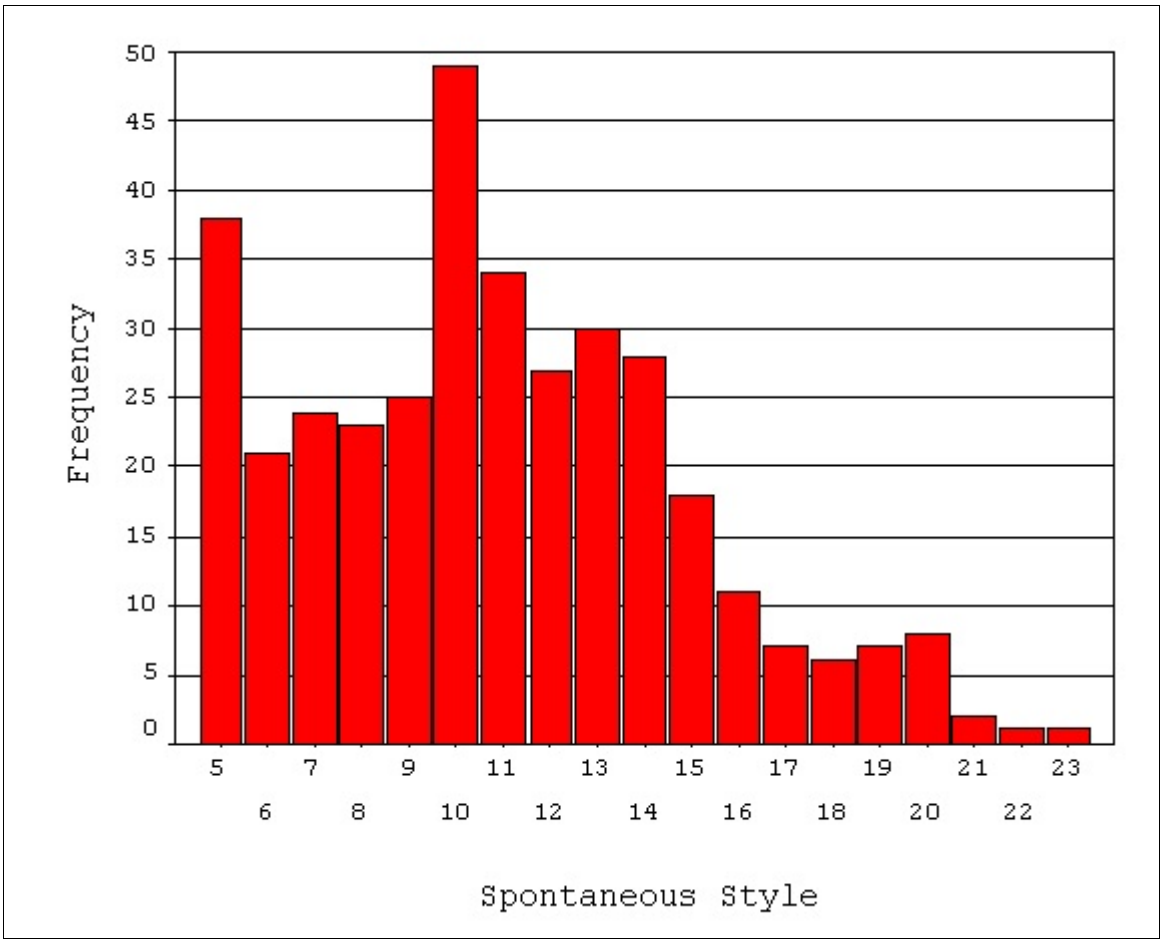
Those with a Avoidant decision-making style attempt to avoid decision making altogether (Scott & Bruce, 1995, p. 820). With a possible range of 5 to 25 and with a midpoint of 15, the Avoidant scores for the NACADA members ranged from 5 to 25. The mean for the group was 10.31 with a standard deviation of 4.72. The median was 10, and the mode was 5. The distribution was skewed with most of the participates toward the low side of the scale with half of the members at 10 or below (see Figure 5).

Figure 5: Distribution of Avoidant Decision-Making Scores



Those with a Spontaneous decision-making style attempt to finalize a decision as soon as possible (Scott & Bruce, 1995, p. 823). With a possible range of 5 to 25 and with a midpoint of 15, the Spontaneous scores for the NACADA members ranged from 5 to 23. The mean for the group was 10.88 with a standard deviation of 3.98. The median was 10.5, and the mode was 10. The distribution was skewed with most of the participates toward the low side of the scale with 88.1% of the members at or below the mid point of 15 for the scale (see Figure 6).

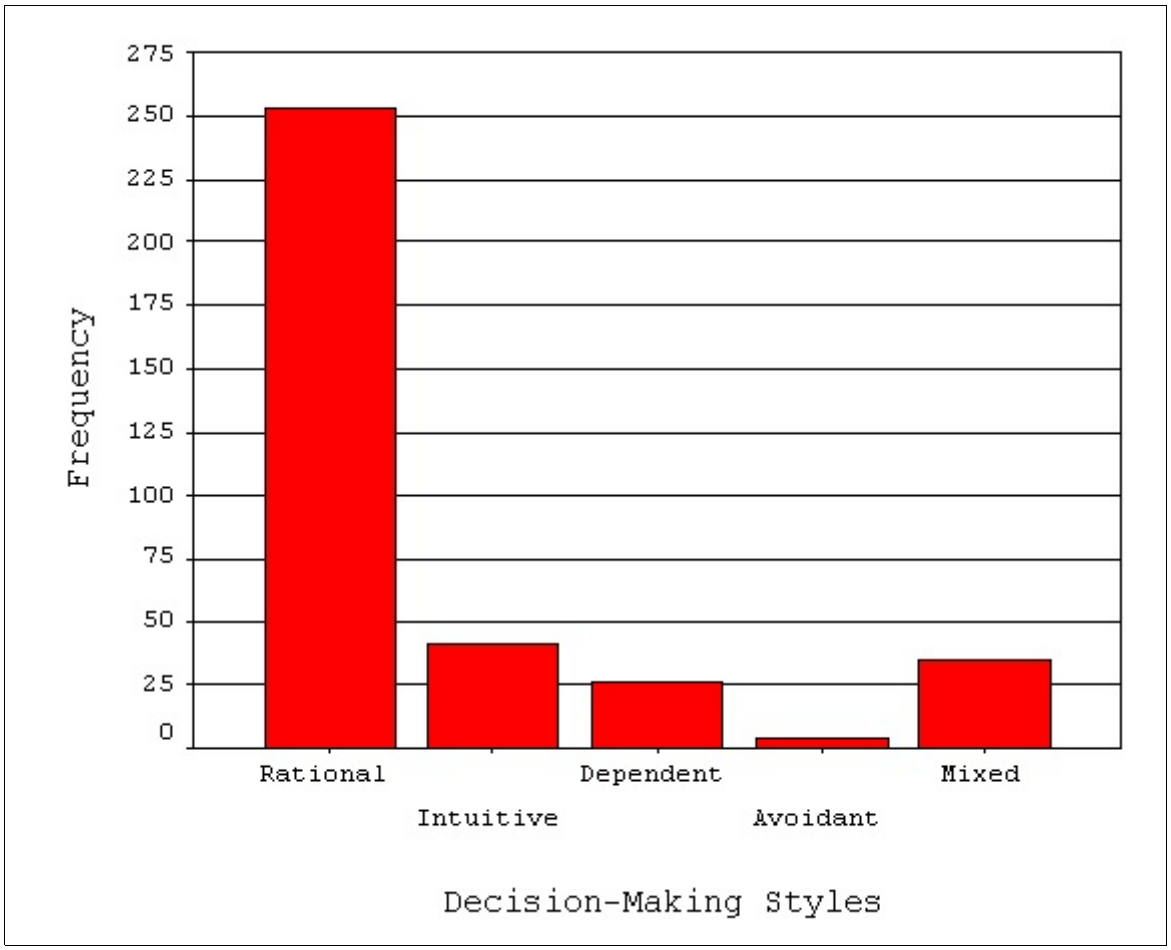
Figure 6: Distribution of Spontaneous Decision-Making Scores



Individuals have a primary decision-making style as well as backup styles (Scott & Bruce, 1995, p. 827). "The five decision-making styles are conceptualized as independent" (Scott & Bruce, 1995, p. 824), and data used to check the intercorrelations among the five scales when the GDMS was developed indicate that "the pattern of correlations suggests conceptual independence among the five scales" (p. 827). The primary style is the person's highest score on these independent scales.

The primary style was identified for each participant (see Figure 7). Nearly three-fourths (70.1%) of the NACADA members used the Rational style as their primary decision-making style. Only four of the 360 participants used the Avoidant style as their primary decision-making style, and none of the participants used the Spontaneous style as their primary decision-making style. The second and third highest preferences also only had a few participants with Intuitive (11.7%) having sightly over 10% and Dependent (7.2%) having slightly under 10% of the participants. Likewise, the group that had equally high scores for more than one style and that was labeled "Mixed" (9.7%) had approximately 10% of the participants.

Figure 7: Distribution of Primary Decision-Making Styles



Ways of Knowing

A profile of the Way of Knowing of the National Academic Advising Association (NACADA) members was constructed to answer the second research question in the study by using the data collected from the Attitudes Toward Thinking and Learning Survey (ATTLS). For the ATTLS (Galotti, Clinchy, Ainsworth, Lavin, & Mansfield, 1999), two separate scores were computed for each of the 360 members of the NACADA who completed the ATTLS. These scores were computed by summing the 10 items of each of the two attitudes toward thinking and learning assessed in the instrument. These areas are Connected Knowing and Separate Knowing (p. 746). Using the Likert-type scale of 1--Strongly Disagree, 2--Somewhat Disagree, 3--Slightly Disagree, 4–Neither Agree nor Disagree, 5--Slightly Agree, 6–Somewhat Agree, and 7–Strongly Agree, the scores in each area could range from 10 to 70 with "high scores indicating strong agreement with that style of knowing" (p. 750). The mid-point for each scale is 40.

Factor Analysis

As with the GDMS, a factor analysis was run to confirm the structure of the ATTLS with the National Academic Advising Association members. Galotti et al. (1999) argued

that there are two scales in the ATTLS; therefore, a factor analysis was run using the 20 items of ATTLS and limiting the number of factors to two. The analysis with the 360 participants confirmed that 18 of the 20 items loaded on the 2 factors above the .4 level; however, half of the items did not load as predicted by the authors of the instrument (see Table 5). Instead of each of the scales loading separately on a factor, the items were mixed so that each of the factors was made up of five items from each of the scales. This suggests a correlation among items of the two scales that is not discussed by the authors of the instrument.

Table 5: 2-Factor Solution for 20 Items of ATTLS

Item	Factor	
	1	2
19	0.769	0.026
15	0.685	0.095
5	0.649	0.042
3	0.629	0.009
17	0.615	-0.011
13	0.606	0.280
1	0.582	0.167
9	0.496	-0.012
11	0.472	0.088
7	0.412	-0.201
20	-0.048	0.721
16	-0.022	0.662
12	0.021	0.646
10	0.046	0.644
14	0.184	0.568
8	0.042	0.544
2	0.043	0.529
18	-0.133	0.481
4	0.145	0.283
6	0.206	0.279

Since the general factor analysis of all of the items in the survey did not break the items into the two separate scales proposed by the authors of the instrument, additional factor analyses were conducted to test if each of the scales composed a single concept. Two separate factor analyses were conducted (see Table 6). One used the 10 items from the Connected scale, and the other used the 10 items from the Separate scale. For each, the number of factors extracted was limited to one. For the Connected scale, all 10 items

loaded on a single factor above the .3 level. For the Separate scale, 9 of the 10 items loaded on a single factor above the .3 level. Based on these results, it was concluded that two separate scales were applicable to the NACADA sample, and ATLLS was scored and analyzed as described by the authors of the instrument.

Table 6: Single-Factor Solution for Each Scale of ATTLS

Connected			Separate	
Item	**Factor**		**Item**	**Factor**
5	.709		13	.730
1	.635		19	.652
3	.611		15	.629
9	.527		17	.556
6	.442		11	.523
4	.407		14	.511
7	.385		20	.479
2	.356		12	.477
10	.351		16	.428
8	.301		18	.084

Reliability

As with the GDMS, Cronbach's alpha was calculated to assess the internal consistency of ATTLS with the NACADA sample. This reliability was calculated using the responses on the 20 items of the ATTLS for the 360 academic advisors who were members of NACADA. The alpha reliability coefficient was .77 ($p < .001$). The squaring of this coefficient yields a coefficient of determination (Huck, 2004, p. 68) that indicates that it explains 59.3% of the variance in the responses. This is above the .7 range which is the minimally acceptable level for a test of this nature (Gay, 1987, p. 234); this minimum level of .7 accounts for about half of the variance in the test (Huck, 2004, p. 69).

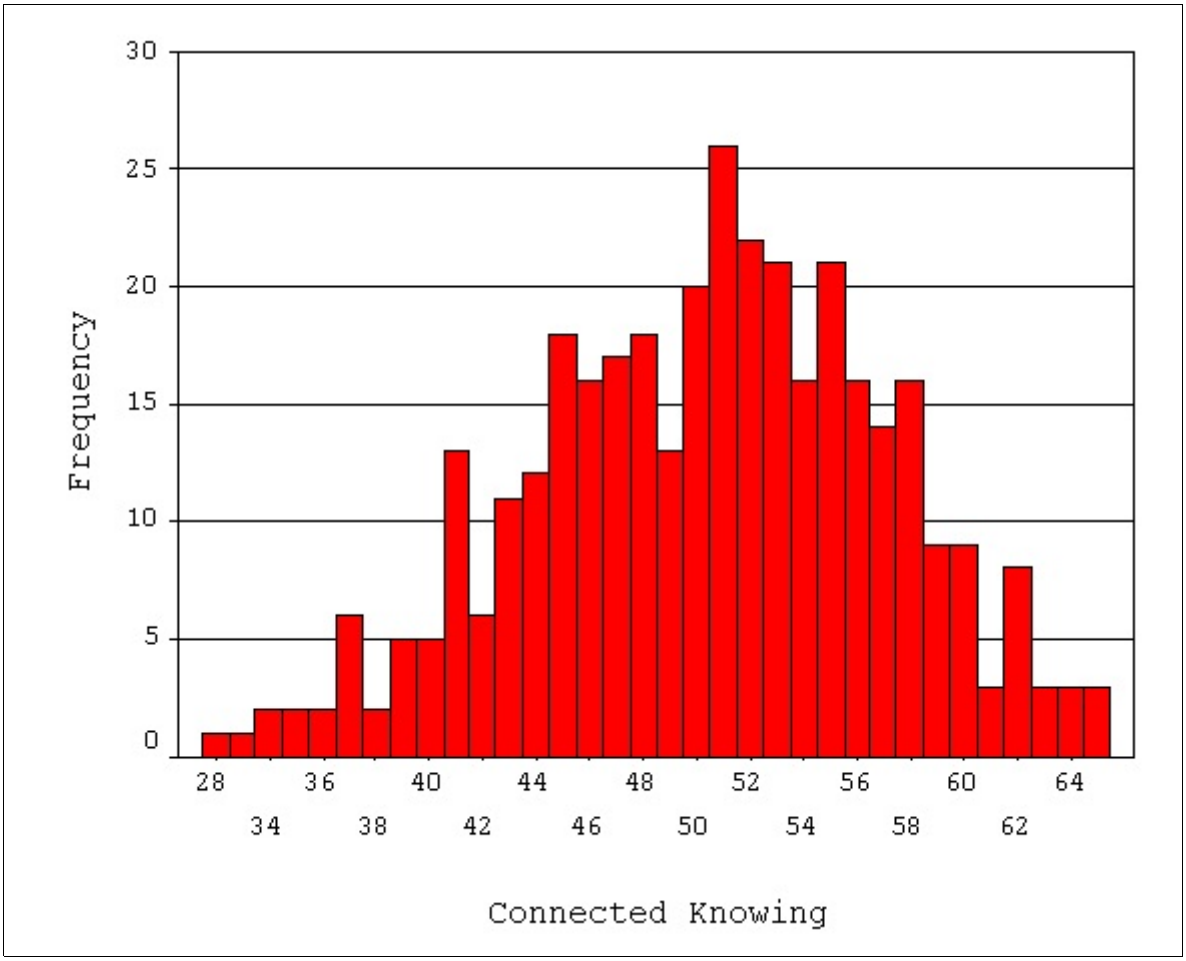
Separate Cronbach's alphas were also calculated for each of the scales on ATLLS. Since the reliability of any

particular subtest is typically lower than the reliability of the total test (Gay, Mills, Airasian, 2006, p. 143) because it has less items, the coefficients were slightly lower for each of the scales. The alpha reliability coefficient was .62 ($p < .001$) for the Connected scale and was .69 ($p < .001$) for the Separate scale. Both were slightly below the conventional standard of .7.

Profile of Participants

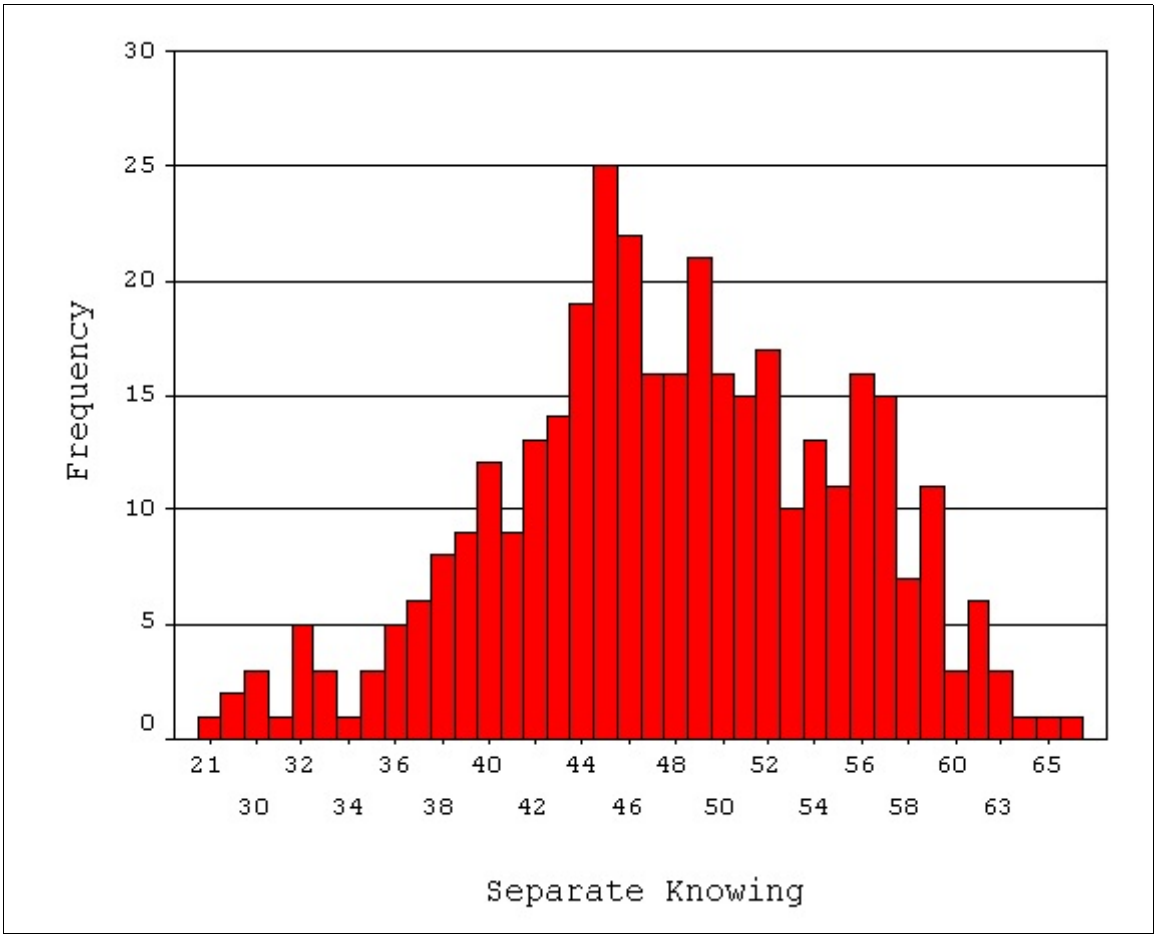
Connected knowers are those who will look at the other person's idea in that person's own terms and try to understand everything from their point of view (Galotti, Drebus, & Remimer, 2001, p. 422). With a possible range of 10 to 70, the Connected Knowing scores for the NACADA members ranged from 28 to 66. The mean for the group 50.41 with a standard deviation of 6.72. Both the median and mode were 51. The distribution was generally bell shaped; however, it leaned toward the high end of the scale and had a mid-point of 50.41 (see Figure 8).

Figure 8: Distribution of NACADA Members on Connected Knowing Scale



Separate knowers are people who looks for what is wrong with an argument or idea (Galotti et al., 1999, p. 282). The basic element of separate knowing is detachment (Galotti et al., 2001, p. 21). They will follow rules so that their judgments are unbiased (p. 68). With a possible range of 10 to 70, the Separate Knowing scores for the NACADA participants ranged from 21 to 67. The mean for the group was 47.75 with as standard deviation of 7.52, and the median was 48. The distribution was generally bell shaped; however, it leaned toward the high end of the scale with a mid point of 48.00 (see Figure 9).

Figure 9: Distribution of NACADA Members on Separate Knowing Scale



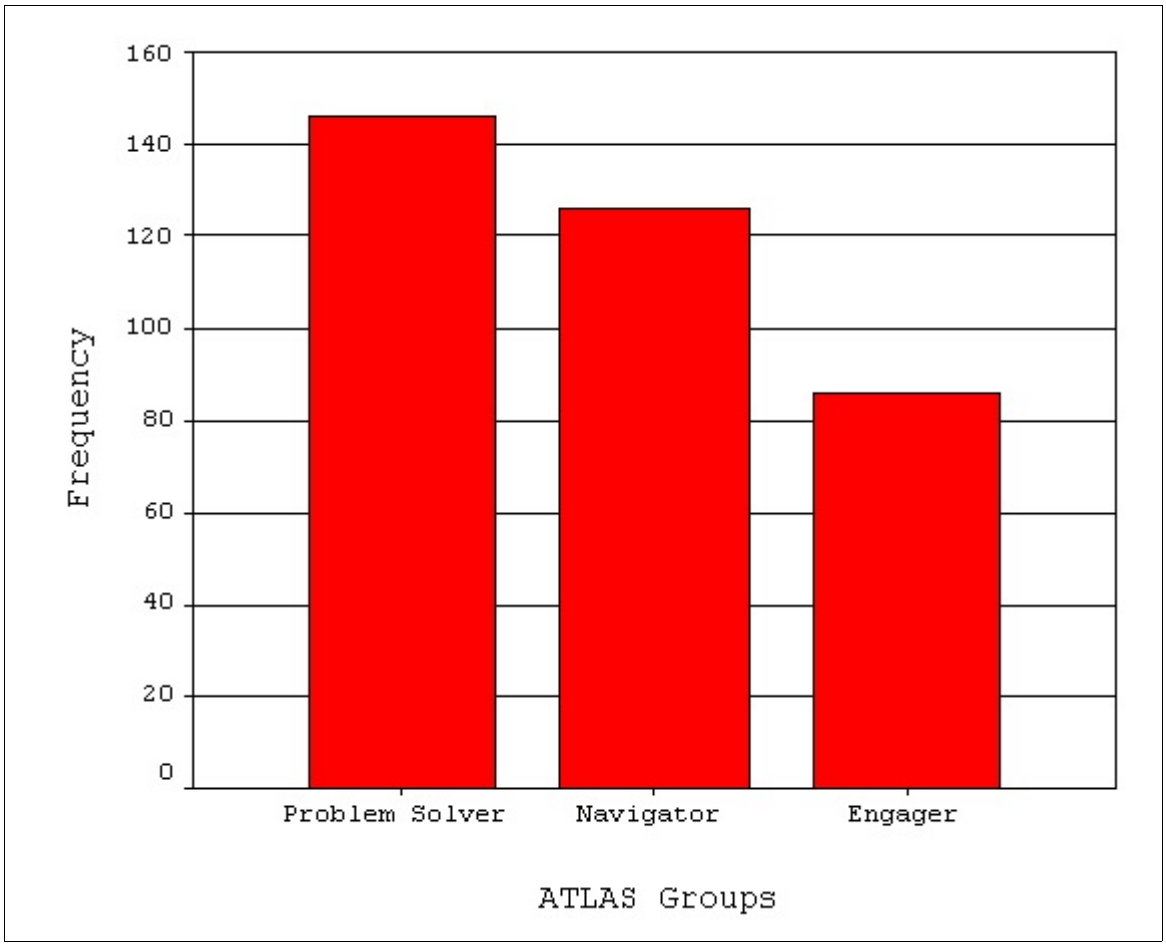
Learning Strategy Profile

A profile of the learning strategy preferences of the NACADA participants was constructed to answer the third research question by using the data from the Assessing The Learning Strategies of AdultS (ATLAS) instrument. ATLAS places a respondent in one of three learning strategy preference groups: Navigators, Problem Solvers, and Engagers. The original format and most widely used form of ATLAS is a bound booklet; however, for research it has been used in a computerized form (Conti, 2009, p. 3). Because the survey for the National Academic Advising Association was on electronic survey, the computerized format was used. This format has the five items from the ATLAS booklet being sentence stems with two options. Participants respond to all of the items. However, in the data analysis the instrument is scored using an SPSS syntax file with "if" statements so that the branching process for the items is the same as it is with the booklet.

Using this format, the learning strategy preference distribution for the 358 NACADA members who completed ATLAS was as follows: Problem Solvers--146 (40.6%), Navigators--126 (35%), and Engagers--86 (23.9%)(see Figure 10). Thus, three-fourths (75.6%) of the academic advisors are Problem

Solvers and Navigators who "initiate a learning task by looking externally from themselves at the utilization of resources that will help them accomplish the learning" (Conti, 2009, p. 891) while about one-fourth (23.9%) are Engagers who initiate a learning task by involving "themselves in the reflective process of determining internally that they will enjoy the learning task enough to finish it" (p. 891).

Figure 10: Distribution of NACADA Members in ATLAS Groups



A chi-square was computed to compare the observed frequency of the learning strategy preference distribution of the NACADA members in this study to the expected preferred learning strategy frequency distribution on the norms for ATLAS. Chi-square is a non-parametric test to determine significance appropriateness for data that is collected in the form of frequencies (Gay, Mills & Airasian, 2006, p. 596). Chi-square "compares the proportions actually observed in a study to the expected proportions to see if they are significantly different" (p. 370). The expected proportions may be based either on the assumption that the groups are equal or upon past data (p. 370). For ATLAS, the expected proportions are the percentages of the distributions from the cluster analysis that was used to create ATLAS. The expected percentages are as follows: Navigator–36.5%, Problem Solvers–31.7%, and Engagers–31.8% (Conti, 2009, p. 891).

Using a criterion level of .05, the distribution of the NACADA members was significantly different from the original distribution that created ATLAS ($\chi^2 = 46.06$, $\underline{df} = 3$, $\underline{p} < .001$) (see Table 7). The NACADA members were different from the norm in that there were significantly more Problem Solvers than anticipated and fewer Engagers than

anticipated. There were only slightly fewer Navigators than expected. Thus, when compared to the general population, there are disproportionally more advisors who will go outside of the box to look at available resources to solve a problem. However, there are fewer advisors in NACADA than people in the general population who initiate learning activities based on personal relationships.

Table 7: Observed and Expected Distributions for ATLAS

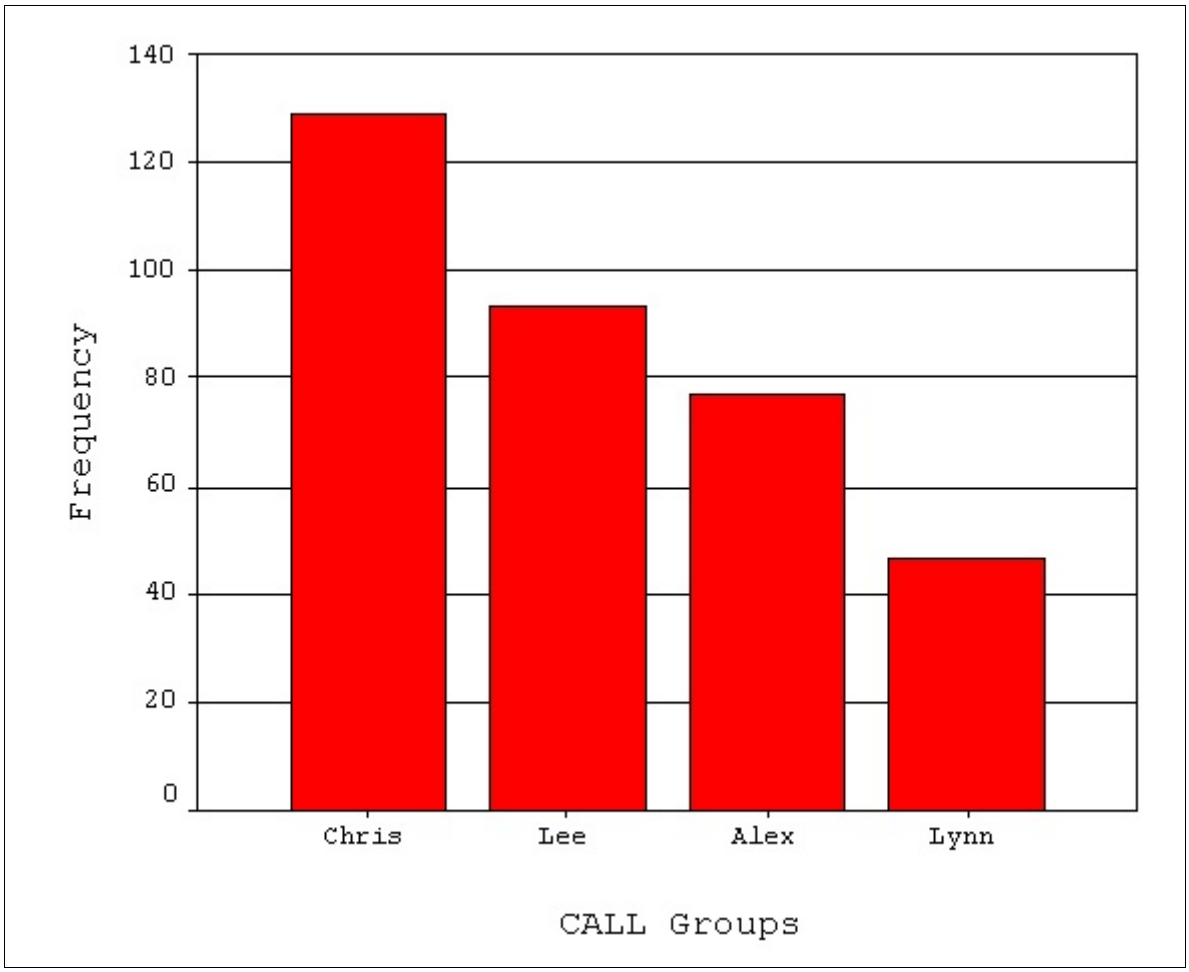
Group	Observed	Expected	Difference
Problem Solver	146	113.49	32.51
Navigator	126	130.67	-4.67
Engager	86	113.84	-27.84

Cultural Appreciation in Lifelong Learning

A profile of the cultural appreciation level of the NACADA participants was constructed to answer the fourth research question by using the data from the Cultural Appreciation in Lifelong Learning instrument. CALL places a respondent in one of four cultural-appreciation groups: Chris Group, Alex Group, Lee Group, and Lynn Group. As with ATLAS, the NACADA members used the computerized form for the CALL. In this form, the data are analyzed by using an SPSS syntax file with "if" statements so that the branching process for the items are the same as it is with the original booklet form of the instrument.

Using this format, the CALL distribution for the 346 NACADA members who completed CALL was as follows: Chris--129 (35.8%); Lee--93 (25.8%); Alex--77 (21.4%);and Lynn--47 (13.1%) (see Figure 11). When the Chris and Alex groups are combined, 57.2% perceive "diversity issues as related to societal causes" (Tapp, 2002, p. 144). When the Lee and Lynn groups are combined, 38.9% perceive "diversity issues as individualistic" (p. 144).

Figure 11: Distribution of NACADA Members in CALL Groups



A chi-square was computed to compare the observed frequency of the multicutural awareness preference distribution of the NACADA members in this study to the expected preferred multicutural awareness frequency distribution on the norms for CALL. The expected proportions may be based either on the assumption that the groups are equal on upon past data (Gay, Mills & Airasian, 2006, p. 370). For CALL, the expected proportions are the percentages of the distributions from the cluster analysis that was used to create CALL. The expected percentages are as follows: Chris–25.7%, Alex--30.7%, Lee–20.6%, and Lynn–23% (Tapp, 2002, p. 141). Using a criterion level of .05, the distribution of the NACADA members was significantly different from the original distribution that created CALL(χ^2 = 46.06, $\underline{df}$ = 3, $\underline{p}$ < .001) (see Table 8). The National Academic Advising Association members were different from the norm in that there were significantly more Chris and Lee respondents than expected. In the formation of CALL, the Chris group scored higher than the Alex group in the larger group that perceived diversity as related to societal issues (pp. 145-146); the Lee group scored higher than the Lynn group in the larger group that perceived diversity issues as individualistic (pp. 146-148).

Thus, for the dyads within each of the larger groupings of the "societal vs individual" dichotomy, the CALL group that most strongly supported diversity was the largest.

Table 8: Observed and Expected Distributions for CALL

Group	Observed	Expected	Difference
Chris	129	88.92	40.08
Alex	77	106.22	-29.22
Lee	93	71.28	21.72
Lynn	47	79.58	-32.58

Relationship with Demographic Variables

The fifth through eighth research questions for this study investigated the relationship between the demographic variables and the four instruments used in the study. Because GDMS and ATTLS produce continuous scores, analysis of variance was used. Chi-square was used with the ATLAS and CALL instruments because they place respondents into categories. The demographic variables that were used in the analyses were the personal variables of (a) gender, (b) race, and (c) age; the professional variables of (a) education, (b) experience advising, and (c) participant's primary role in the institution; and the institutional variables of (a) the type of institution, (b) the size of the participant's institution, (c) the degrees offered at the institution, (d) the region of NACADA in which the participant worked.

Analysis of Variance

Analysis of variance (ANOVA) "is a parametric test of significance used to determine whether a significant difference exists between two or more means at a selected probability level" (Gay, Mill & Airasian, 2006, p. 359). It seeks to find "whether the differences among the means represent true, significant differences or chance differences due to sampling error" (p. 359).

The basic idea underlying ANOVA is that the total variation in the scores can be divided into between-group variance and within-group variance. The between-group variance is due to the treatment groups, and the within-group variance is due to error variance. These variances are used to form a ratio that is called the F ratio. For this ratio, the between group variance is the numerator, and the within-group variance is the denominator. "If the treatment variance is sufficiently larger than the error variance, a significant F ratio results; the null hypothesis is rejected, and it is concluded that the treatment had a significant effect on the dependent variable" (p. 360). If the treatment error and the error treatment do not differ more than expected by chance, the F ratio is small indicating that it is not significant.

Decision-Making Styles

ANOVA was used to answer the fifth research question that investigated the relationship between decision-making styles as measured by the GDMS and the personal, professional, and institutional variables used in this study. Separate analysis variances were run for each of the personal, professional, and institutional variables. The criteria value of .05 was used for each analysis. Also, since the GDMS consists of five separate scales, separate one-way ANOVA's were calculated for each of the scales: Rational, Intuitive, Dependent, Avoidant, and Spontaneous. For gender (see Table 9), no significant differences found for four of the five scales. A significant difference was found for the Intuitive scale. This difference was due to the female ($\underline{M}$ = 17.86) scoring higher than the males ($\underline{M}$ = 16.68).

A researcher must "always consider the practical significance of statistically significant differences" (Gay, Mill & Airasian, 2006, p. 389). Just because results are statistically significant does not mean that they have practical significance. Statistical significance means that the differences are probably real, but they may not be important (p. 389). Therefore, the educational researcher

needs to determine if the results are meaningful in real-world practice.

Although a significant difference was found in the Intuitive scale due to gender, the differences between the means for the females and males was only 1.20 (17.86 - 16.68 = 1.20). This difference was spread over 5 items. Thus, the average difference between the two groups is only .236 (17.86 - 16.68 = 1.18/5 = .236). The average score for the females for the Intuitive items was 3.57 (17.86/5 = 3.57), and the average score per item was 3.37 (16.68/5 = 3.37) for the males. Thus, both males and females were almost at the point on the 5-point Likert scale. Both were approximately half way between "Neither Agree nor Disagree" and "Somewhat Agree". Because the two scores were so close, this difference was judged to lack practical significance.

For race, the ethnic groups were recoded into two groups. One group, which was very large, was the Caucasians. The other group was composed of all the other ethnic groups and was labeled as "Non-Caucasian". Using the criterion level of .05, no differences were found on four of the five scales. Although the Rational scale was very close (p = .055) to the criterion level, an inspection of the means indicated that the difference was not practical: Caucasian--

22.19 and Non-Caucasian--22.98. Likewise, although Advoidant showed a significant difference, the means for the Caucasians (M = 10.57) and the Non-Caucasians (M = 8.95) was only 1.62 (10.57 - 8.95 = 1.62). When this difference is distributed across the five items in the scale, the difference between the two groups is only .324 (1.62/5 = .324) per item. The average response for each item for the Caucasians is 2.11 (10.57/5 = 2.11) and for the Non-Caucasians (8.95/5 = 1.79). On the 5-point scale, the two groups are either slightly below or slightly above "Somewhat Disagree". Because the two scores were so close to the Somewhat Disagree position, this difference was judged to lack practical significance.

For age, the participants were grouped by quartiles: 23-35, 36-46, 47-55, and 56-66. No differences were found on four of the five scales. There was a significant difference on Dependent (see Table 9). When the F is significant and there are more than two means, a post hoc comparison is necessary in order to determine which means are significantly different (Gay, Mill & Airasian, 2006, p. 363). For this, "the Scheffe test is the most widely used" (p. 363). This test is "appropriate for making any and all possible comparisons involving a set of means" (p. 363).

The Scheffe post hoc test revealed two subsets for the four age groups. The 47-55 age group forms one subset. Their average score on the Dependent scale was 16.27. The other subset contained the 23-35 age group. Their average score on the Dependent scale was 18.22. The 36-46 and 56-66 age groups were similar to both groups. The overall difference between the youngest group with ages 23-35 and the next to oldest group with ages 47-55 was 1.95 or .39 (1.95/5 = .39) per item. The average item score was 3.25 (16.27/5 = 3.25) for the 23-35 group and was 3.65 (18.23/5 = 3.65) for the 47-55 group. Although the difference is slightly over one-third of an increment, the difference on the 5-point scale is between being slightly above or slightly below the mid-point of the interval of being neutral and being somewhat agreeing with using the Dependent decision-making style. The practical significance is questionable of being slightly above neutral about depending on others when making decisions.

Table 9: ANOVA of GDMS Scales and Personal Demographic Variables

Groups	SS	df	MS	F	p
Gender					
Rational					
Between	3.24	1	3.24	0.40	0.527
Within	2899.91	358	8.10		
Intuitive					
Between	68.98	1	68.98	3.92	0.049
Within	6301.02	358	17.60		
Dependent					
Between	7.25	1	7.25	0.37	0.545
Within	7078.25	358	19.77		
Avoidant					
Between	3.68	1	3.68	0.17	0.685
Within	7989.85	358	22.32		
Spontaneous					
Between	7.48	1	7.48	0.47	0.493
Within	5689.14	358	15.89		
Race					
Rational					
Between	29.86	1	29.86	3.72	0.055
Within	2873.29	358	8.03		
Intuitive					
Between	4.97	1	4.97	0.28	0.597
Within	6365.03	358	17.78		
Dependent					
Between	0.23	1	0.23	0.01	0.913
Within	7085.27	358	19.79		
Avoidant					
Between	124.01	1	124.01	5.64	0.018
Within	7869.52	358	21.98		
Spontaneous					
Between	0.80	1	0.80	0.05	0.823
Within	5695.82	358	15.91		
Age					
Rational					
Between	16.41	3	5.47	0.66	0.577
Within	2835.13	342	8.29		
Intuitive					
Between	97.76	3	32.59	1.83	0.141

Within	6086.53	342	17.80		
Dependent					
Between	219.90	3	73.30	3.77	0.011
Within	6641.98	342	19.42		
Avoidant					
Between	55.00	3	18.33	0.84	0.475
Within	7500.61	342	21.93		
Spontaneous					
Between	102.95	3	34.32	2.18	0.090
Within	5373.67	342	15.71		

The professional variables of education, experience, and primary role at one's institution were recoded for the analysis. For these analyzes, education was recoded into (a) below a master's degree, (b) master's degree, and (c) above a master's degree. Experience was recoded into the following years of experience in advising: 1-5, 6-8, 9-15, and 16-40. The primary role in the institution was recoded into (a) advising and (b) administrative. Using these groups, no differences were found for any of the scales for education and primary role in the institution and for four of the five scales for experience (see Table 10). The only significant difference for any of the analyzes for the professional variables was for Dependent and experience. The Scheffe post hoc test was used to find the difference among the experience groups on the Dependent scale. The post hoc analysis formed two sub-groups out of the dependent scale. The 16-40 years of experience group formed one subgroup.

Their average score on the dependent scale is 16.00. The 6-8 years of experience formed the second subgroup. Their average score on the Dependent scale is 18.02. The overall difference between the two groups was 2.02 or .39 (2.02/5 = .40) per item. The average item score was 3.25 (16.00/5 = 3.20) for the group with 16-4 years experience and was 3.65 (18.02/5 = 3.60) for the group with 6-8 years experience. Although the difference is two-fifth of an increment, the difference on the 5-point scale is between being slightly above or slightly below the mid-point of the interval of being neutral and being somewhat agreeing with using the Dependent decision-making style. The practical significance is questionable of being slightly above neutral about depending on others when making decisions.

Table 10: ANOVA of GDMS Scales and Professional Demographic Variables

Groups	SS	df	MS	F	p
Education					
Rational					
Between	22.76	2	11.38	1.41	0.245
Within	2880.39	357	8.07		
Intuitive					
Between	42.61	2	21.30	1.20	0.302
Within	6327.39	357	17.72		
Dependent					
Between	87.91	2	43.95	2.24	0.108
Within	6997.59	357	19.60		
Avoidant					
Between	79.95	2	39.98	1.80	0.166

Within	7913.58	357	22.17		
Spontaneous					
Between	37.95	2	18.97	1.20	0.303
Within	5658.67	357	15.85		
Experience					
Rational					
Between	28.20	3	9.40	1.16	0.324
Within	2873.24	355	8.09		
Intuitive					
Between	26.40	3	8.80	0.49	0.687
Within	6321.76	355	17.81		
Dependent					
Between	199.31	3	66.44	3.43	0.017
Within	6885.01	355	19.39		
Avoidant					
Between	107.85	3	35.95	1.62	0.183
Within	7857.36	355	22.13		
Spontaneous					
Between	28.00	3	9.33	0.58	0.625
Within	5667.85	355	15.97		
Primary Role					
Rational					
Between	2.84	1	2.84	0.34	0.559
Within	2843.62	342	8.31		
Intuitive					
Between	1.44	1	1.44	0.08	0.778
Within	6189.32	342	18.10		
Dependent					
Between	5.35	1	5.35	0.27	0.606
Within	6878.08	342	20.11		
Avoidant					
Between	75.75	1	75.75	3.48	0.063
Within	7446.23	342	21.77		
Spontaneous					
Between	13.43	1	13.43	0.84	0.361
Within	5491.63	342	16.06		

The institutional variables were institutional type, size of institution, highest degree offered by the

institution, and NACADA region of the institution. The institutional type was recoded into (a) public institutions and (b) private, non-profit institutions. For the size of the institution, the institutions were grouped as follows: (a) 300 to 7,000 students, (b) 7,001 to 16,000 student, (c) 16,001 - 27,000 students, and (d) 27,001 - 90,000 students. Again, there was no significant difference in the GDMS scale The following groupings were used for highest degree offered at the institution: (a) bachelor degree or less, (b) master's degree and additional programs but not a doctoral granting institution, and (c) doctoral granting institution. The NACADA regions were grouped as follows: (a) Northeast, (b) Mid-Atlantic, (c) Mid-South, (d) Southeast, (e) Great Lakes, (f) North Central, (g) South Central, (h) Northwest, (i) Pacific, and (j) Rocky mountain. Using these groups, no differences were found for any of the scales for institutional type, size of institution, and highest degree offered and for four of the five scales for NACADA region (see Table 11). The only significant difference for any of the analyzes for the institutional variables was for Avoidant and NACADA region. The Scheffe post hoc test was used to find the difference among the regions on the Avoidant scale. This post hoc analysis indicated that none

of the groups were significantly different from the others; "it is entirely possible...to find no significant differences even though the F for the analysis of variance was significant" (Gay, Mills, & Airasian, 2006, p. 364). Thus, no differences among the groups for the institutional variables were found for any of the GDMS scales.

Table 11: ANOVA of GDMS Scales and Institutional Variables

Groups	SS	df	MS	F	p
Institutional Type					
Rational					
Between	0.05	1	0.05	0.01	0.938
Within	2863.03	350	8.18		
Intuitive					
Between	1.36	1	1.36	0.08	0.783
Within	6220.75	350	17.77		
Dependent					
Between	0.00	1	0.00	0.00	0.995
Within	6935.11	350	19.81		
Avoidant					
Between	44.98	1	44.98	2.01	0.157
Within	7836.10	350	22.39		
Spontaneous					
Between	0.35	1	0.35	0.02	0.883
Within	5585.55	350	15.96		
Size of Institution					
Rational					
Between	16.34	3	5.45	0.66	0.577
Within	2834.89	344	8.24		
Total	2851.23	347			
Intuitive					
Between	41.96	3	13.99	0.77	0.513
Within	6263.38	344	18.21		
Dependent					
Between	54.08	3	18.03	0.90	0.440
Within	6862.98	344	19.95		

Avoidant					
Between	121.71	3	40.57	1.88	0.133
Within	7420.80	344	21.57		
Spontaneous					
Between	68.75	3	22.92	1.47	0.222
Within	5353.00	344	15.56		
Highest Degree Offered					
Rational					
Between	33.54	2	16.77	2.08	0.126
Within	2866.76	356	8.05		
Intuitive					
Between	3.61	2	1.81	0.10	0.904
Within	6337.87	356	17.80		
Dependent					
Between	17.03	2	8.52	0.43	0.650
Within	7033.36	356	19.76		
Avoidant					
Between	2.96	2	1.48	0.07	0.936
Within	7968.55	356	22.38		
Spontaneous					
Between	17.36	2	8.68	0.55	0.579
Within	5644.62	356	15.86		
Region					
Rational					
Between	78.93	9	8.77	1.09	0.372
Within	2816.98	349	8.07		
Intuitive					
Between	146.40	9	16.27	0.91	0.514
Within	6216.47	349	17.81		
Dependent					
Between	54.83	9	6.09	0.30	0.974
Within	7026.31	349	20.13		
Avoidant					
Between	401.25	9	44.58	2.06	0.033
Within	7563.96	349	21.67		
Spontaneous					
Between	105.37	9	11.71	0.74	0.676
Within	5556.61	349	15.92		

Ways of Knowing

ANOVA was used to answer the sixth research question that investigated the relationship between ways of knowing as measured by the ATTLS and the personal, professional, and institutional variables used in this study. Separate analysis variances were run for each of the personal, professional, and institutional variables. The criteria value of .05 was used for each analysis. Also, because the ATTLS consists of two separate scales, separate one-way ANOVA's were calculated for the Connected Knowing and the Separate Knowing scales.

The personal variables included gender, race, and age. Using the criterion level of .05, no significant differences were found among the groups for any of these variables for either the Connected Knowing or the Separate Knowing scales (see Table 12).

Table 12: ANOVA of ATTLS Scales and Personal Demographic Variables

Groups	SS	df	MS	F	p
Gender					
Connected Knowing					
Between	4.92	1	4.92	0.11	0.742
Within	16196.41	358	45.24		
Separate Knowing					
Between	145.04	1	145.04	2.58	0.109
Within	20129.96	358	56.23		
Race					
Connected Knowing					
Between	33.53	1	33.53	0.74	0.389
Within	16167.80	358	45.16		
Separate Knowing					
Between	54.67	1	54.67	0.97	0.326
Within	20220.33	358	56.48		
Age					
Connected Knowing					
Between	169.85	3	56.62	1.24	0.294
Within	15586.38	342	45.57		
Separate Knowing					
Between	341.67	3	113.89	2.00	0.114
Within	19462.57	342	56.91		

The professional variables included education, experience in advising, and primary role at one's institution. Using the criterion level of .05, no significant differences were found among the groups for any of these variables for either the Connected Knowing or the Separate Knowing scales (see Table 13).

Table 13: ANOVA of ATTLS Scales and Professional Demographic Variables

Groups	SS	df	MS	F	p
Education					
Connected Knowing					
Between	85.22	2	42.61	0.94	0.390
Within	16116.11	357	45.14		
Separate Knowing					
Between	46.69	2	23.34	0.41	0.663
Within	20228.31	357	56.66		
Experience					
Connected Knowing					
Between	82.16	3	27.39	0.60	0.613
Within	16089.78	355	45.32		
Separate Knowing					
Between	201.19	3	67.06	1.20	0.309
Within	19824.97	355	55.84		
Primary Role					
Connected Knowing					
Between	0.41	1	0.41	0.01	0.924
Within	15406.42	342	45.05		
Separate Knowing					
Between	20.87	1	20.87	0.37	0.544
Within	19395.58	342	56.71		

The institutional variables included institutional type, size of institution, highest degree offered by the institution, and NACADA region. Using the criterion level of .05, no significant differences were found among the groups for any of these variables for either the Connected Knowing or the Separate Knowing scales (see Table 14).

Table 14: ANOVA of ATTLS Scales and Institutional Variables

Groups	SS	df	MS	F	p
Institutional Type					
Connected Knowing					
Between	11.01	1	11.01	0.25	0.620
Within	15627.44	350	44.65		
Separate Knowing					
Between	2.76	1	2.76	0.05	0.826
Within	19896.51	350	56.85		
Size of Institution					
Connected Knowing					
Between	335.14	3	111.71	2.48	0.061
Within	15515.60	344	45.10		
Separate Knowing					
Between	168.26	3	56.09	1.00	0.393
Within	19292.81	344	56.08		
Highest Degree Offered					
Connected Knowing					
Between	175.08	2	87.54	1.95	0.144
Within	15994.96	356	44.93		
Separate Knowing					
Between	299.91	2	149.95	2.69	0.069
Within	19869.79	356	55.81		
Region					
Connected Knowing					
Between	317.57	9	35.29	0.78	0.637
Within	15840.26	349	45.39		
Separate Knowing					
Between	460.04	9	51.12	0.90	0.524
Within	19796.87	349	56.72		

Learning Strategy Preferences

Chi-square was used to answer the seventh research question that investigated the relationship between the participants' learning strategy preferences as identified with ATLAS and the personal, professional, and institutional

variables used in this study. Chi-square tests can be used either to compare groups along one dimension or "used when frequencies are categorized along more than one dimension" (Gay, Mills, and Airasian, 2006, p. 371). The chi-square test with two or more samples on a response variable are termed independent-samples chi-square test (Huck, 2004, p. 463). The data for these are often displayed in a contingency table. "To find the expected frequency for a particular cell, or category, we multiply the corresponding row total by the corresponding column total and divide by the overall total" (Gay, Mills, and Airasian, 2006, p. 374). This process provides the proportion of the total sample that can be expected in each cell. "Whenever a chi-square test compares two groups on a response variable that has two or more categories, the null hypothesis states simply that the two populations are distributed in the same fashion across the various response categories" (Huck, 2004, p. 467). Thus, the chi-square is simply setting up the expected proportions for each cell of the contingency table and testing these against the observed frequencies (p. 465). This is the process that was used for the chi-square tests using ATLAS and the personal, professional, and institutional variables used in this study.

Separate chi-square tests were calculated for each of the personal variables. For these analyses, one dimension was for the variables that were categorized in the same groups as for the ANOVAs, and the other dimension was categorized by the three groups of ATLAS: Navigator, Problem Solver, and Engager (see Table 15). Using a criterion level of .05, there were no significant differences for the personal variables of gender (χ^2 = 1.17, df = 2, p = .557), race (χ^2 = .27, df = 2, p = .874), and age (χ^2 =2.06, df = 2, p = .914).

Table 15: Chi Square of ATLAS and Personal Demographic Variables

Groups	Nav.	Pro. Sol.	Eng.	Total
Gender				
Male	20	21	17	58
Female	106	125	69	300
Total	126	146	86	358
Race				
Caucasian	107	122	74	303
Non-Caucasian	19	24	12	55
Total	126	146	86	358
Age				
23-35	32	33	26	91
36-46	29	35	17	81
47-55	36	40	22	98
56-66	24	31	19	74
Total	121	139	84	344

Separate chi-square tests were calculated for each of the personal variables. For these analyses, one dimension

was for the variables that were categorized in the same groups as for the ANOVAs, and the other dimension was categorized by the three groups of ATLAS: Navigator, Problem Solver, and Engager (see Table 16). Using a criterion level of .05, no significant differences were found for education (χ^2 = 2.14, df = 4, p =.711) and experience, (χ^2 = 2.67, df = 6, p = .849). However, a significant difference was found for the advisor's primary role at the institution (χ^2 = 6.44, df = 2, p = .040). As with ANOVA, the data must be more closely examined once a significant difference is found. The analysis of the standardized residuals can be used for this purpose (Sheskin, 2007, p. 264). The residuals are the differences between the expected and observed frequencies for each cell of the contingency table. The standardized residuals are expressed as a standard deviation score with a value of 1.96 indicating that the cell makes a significant contribution at the .05 level to the chi-square value (pp. 264-265). While there were more Engagers in the advising group (n = 54, p = .14) and less Engagers in the administrative group (n = 27, p = .11) than expected, this disparity was not large enough to be a statistically significant contribution to the chi-square value. Consequently, although the distribution was not due to

chance, it was not strong enough to have a practical difference.

Table 16: Chi Square of ATLAS and Professional Demographic Variables

Groups	Nav.	Pro. Sol.	Eng.	Total
Education				
Less than Masters	13	16	12	41
Masters	78	94	57	229
Above Masters	35	36	17	88
Total	126	146	86	358
Experience				
1 to 5	41	49	31	121
6 to 8	21	23	14	58
9 to 15	38	35	22	95
16 to 40	25	39	19	83
Total	125	146	86	357
Primary Role				
Advising	59	74	54	187
Administrate	61	67	27	155
Total	120	141	81	342

Separate chi-square tests were calculated for each of the institutional variables. For these analyses, one dimension was for the variables that were categorized in the same groups as for the ANOVAs, and the other dimension was categorized by the three groups of ATLAS: Navigator, Problem Solver, and Engager (see Table 17). Using a criterion level of .05, there were no significant differences for the institutional variables of institutional type (χ^2 =.38, $\underline{df}$ = 2, $\underline{p}$ = .827), size of institution (χ^2 = 9.93, $\underline{df}$ = 6, $\underline{p}$ =

.127), highest degree offered (χ^2 =3.85, df = 4, p = .512), and NACADA region, (χ^2 =3.85, df = 4 , p = .427).

Table 17: Chi-Square of ATLAS and Institutional Variables

Groups	Nav.	Pro. Sol.	Eng.	Total
Institutional Type				
Public	94	110	68	272
Private (non-profit)	29	32	17	78
Total	123	142	85	350
Size of Institution				
300 to 7,000	29	39	21	89
7,001 to 16,000	38	34	18	90
16,001 to 27,000	20	39	23	82
27,001 to 90,000	38	28	19	85
Total	125	140	81	346
Highest Degree Offered				
BA or less	23	28	14	65
MA or Specialist	25	25	24	74
Doctoral	78	92	48	218
Total	126	145	86	357
Region				
Northeast	6	15	4	25
Mid-Atlantic	17	18	9	44
Mid-South	15	13	4	32
Southeast	7	8	11	26
Great Lakes	30	32	23	85
North Central	9	11	5	25
South Central	19	20	12	51
Northwest	2	9	3	14
Pacific	8	7	6	21
Rocky Mountain	12	13	9	34
Total	125	146	86	357

Thus, several chi-square tests were calculated to investigate the relationship of ATLAS to the personal, professional, and institutional variables in this study (see

Table 18). Only 1 of the 10 tests were significant, and for this significant result, the distribution of the observed counts in the cells were not great enough to provide a practical difference.

Table 18: Chi-Square Values for ATLAS and Personal, Professional, and Institutional Variables

Variable	Value	df	p
Personal Demographic			
Gender	1.17	2	.557
Race	.27	2	.874
Age	2.06	6	.914
Professional Demographic			
Education	2.14	4	.711
Experience	2.67	6	.849
Primary Role	6.44	2	.040
Institutional Variables			
Institutional Type	.38	2	.827
Size of Institution	9.93	6	.127
Highest Degree Offered	3.85	4	.427
Region	17.16	18	.512

Multicultural Awareness

Chi-square was used to answer the eighth research question that investigated the relationship between the participants' multicultural awareness level as identified with CALL and the personal, professional, and institutional variables used in this study. Separate chi-square tests were calculated for each of the personal variables. For these analyses, one dimension was for the variables that were categorized in the same groups as for the ANOVAs, and the

other dimension was categorized by the four groups of CALL: Chris, Alex, Lee, and Lynn (see Table 19). Using a criterion level of .05, there were no significant differences for the personal variables of gender (χ^2 = 4.62, df = 3, p = .655) and race (χ^2 = 2.04, df = 3, p = .565). However, there was a significant difference for age (χ^2 = 21.29, df = 9, p = .011). The standardized residuals revealed that this was due to differences in the Chris group. There were more in the Chris group from the 23-35 years-old group (n = 48, p = .012) and less from the 47-55 years-old group (n = 24, p = .057) than expected.

Table 19: Chi-Square of CALL and Personal Demographic Variables

Group	Chris	Alex	Lee	Lynn	Total
Gender					
Male	19	11	19	8	57
Female	110	66	74	39	289
Total	129	77	93	47	346
Race					
Caucasian	107	67	82	38	294
Non-Caucasian	22	10	11	9	52
Total	129	77	93	47	346
Age					
23-35	48	15	15	11	89
36-46	33	16	20	9	78
47-55	24	21	33	15	93
56-66	21	21	21	11	74
Total	126	73	89	46	334

Separate chi-square tests were calculated for each of

the professional variables. For these analyses, one dimension was for the variables that were categorized in the same groups as for the ANOVAs, and the other dimension was categorized by the four groups of CALL: Chris, Alex, Lee, and Lynn (see Table 20). Using a criterion level of .05, no significant differences were found for education (χ^2 = 11.64, df = 6, p = .070), experience, (χ^2 = 9.84, df = 9, p = .364), and the advisor's primary role at the institution (χ^2 = 1.53, df = 3, p = .676).

Table 20: Chi-Square of CALL and Professional Demographic Variables

Group	Chris	Alex	Lee	Lynn	Total
Education					
Less than Masters	9	6	19	6	40
Masters	86	52	53	32	223
Above Masters	34	19	21	9	83
Total	129	77	93	47	346
Experience					
1 to 5	48	22	27	17	114
6 to 8	23	9	18	7	57
9 to 15	32	20	30	12	94
16 to 40	25	26	18	11	80
Total	128	77	93	47	345
Primary Role					
Advising	73	40	46	24	183
Administrate	49	35	42	21	147
Total	122	75	88	45	330

Separate chi-square tests were calculated for each of the institutional variables. For these analyses, one

dimension was for the variables that were categorized in the same groups as for the ANOVAs, and the other dimension was categorized by the four groups of CALL: Chris, Alex, Lee, and Lynn (see Table 21). Using a criterion level of .05, there were no significant differences for the institutional variables of institutional type (χ^2 = 1.38, df = 3, p = .642), size of institution (χ^2 = 9.35, df = 9, p = .364), highest degree offered (χ^2 = 10.08, df = 6, p = .121), and NACADA region, (χ^2 = 38.68, df = 27, p = .068).

Table 21: Chi-Square of CALL and Institutional Variables

Group	Chris	Alex	Lee	Lynn	Total
Institutional Type					
Public	98	59	73	31	261
Private (non profit)	30	15	19	13	77
Total	128	74	92	44	338
Size of Institution					
300 to 7,000	29	24	24	11	88
7,001 to 16,000	27	16	31	14	88
16,001 to 27,000	36	16	18	8	78
27,001 to 90,000	33	19	19	9	80
Total	125	75	92	42	334
Highest Degree Offered					
BA or less	24	11	24	4	63
MA or Specialist	24	22	16	12	74
Doctoral	80	44	53	31	208
Total	128	77	93	47	345
Region					
Northeast	7	8	7	2	24
Mid-Atlantic	21	11	6	6	44
Mid-South	11	4	12	4	31
Southeast	10	9	3	4	26
Great Lakes	28	15	30	10	83
North Central	9	6	8	2	25
South Central	9	12	14	12	47
Northwest	6	1	4	2	13
Pacific	8	5	2	3	18
Rocky Mountain	20	6	6	2	34
Total	129	77	92	47	345

Thus, several chi-square tests were calculated to investigate the relationship of CALL to the personal, professional, and institutional variables in this study (see Table 22). Only 1 of the 10 tests were significant. The significant difference was between the 23-35 years group and the 47-55 years group who were in the Chris group. There

were more who strongly supported cultural diversity from the youngest group than expected while there were fewer of those who supported diversity at this highest level in the 47-55 years of age group.

Table 22: Chi-Square Values for CALL and Personal, Professional, and Institutional Variables

Variable	Value	df	p
Personal Demographic			
Gender	1.62	3	.655
Race	2.04	3	.565
Age	21.29	9	.011
Professional Demographic			
Education	11.64	6	.070
Experience	9.84	9	.364
Primary Role	1.53	3	.676
Institutional Variables			
Institutional Type	1.68	3	.642
Size of Institution	9.35	9	.406
Highest Degree Offered	10.08	6	.121
Region	38.68	27	.068

Interaction of Cognitive Processes

Discriminant analysis was used to answer the ninth research question that investigated the interaction among the participants' decision-making style, ways of knowing preference, learning strategy preference, and cultural appreciation level. Discriminant analysis is a multivariate procedure for identifying "relationships between qualitative criterion variables and quantitative predictor variables" (Kachigan, 1991, p. 216). This procedure, which is also known as discrimination analysis, identifies "boundaries between groups of objects" (p. 216). These boundaries distinguish or discriminate the objects in respective criterion groups using those characteristic variables.

"Rather than being concerned with and using terms such as dependent and independent variables, discriminant analysis focuses upon the groups that exist and the set of discriminating variables that may explain the differences between the groups" (Conti, 1993, p. 91). Therefore, this multivariate technique investigates the interrelationship among the variables to determine if a person's placement in a specific group can be explained (p. 91).

The benefit of putting the variables in groups is that the researcher is able to learn which variables are related to the criterion variables and is "able to predict values on the criterion variable when given values on the predictor variables" (Kachigan, 1991, p. 216). When an object or person is put into a group, it is mutually exclusive to that group. In other words, what belongs to one group cannot belong to another group. In the analysis, all of the groups are measured with the same set of predictor variables, but the groups may have a different number of members (p. 218). The groups are the criterion variable in discriminant analysis. The criterion variable can have two values or have several values. Whether the criterion variable is dichotomous or multi-valued, "the task of discriminant analysis is to classify the given objects into groups--or,

equivalently, to assign them a qualitative label--based on information on various predictor or classification variables" (p. 218).

The discriminant analysis produces an equation that is called a discriminant function. The discriminant function is "a formula which contains the variables and their coefficients and which can be used to place people in the groups" (Conti, 1993, p. 91). The parameters or characteristics of the discriminant function are "(1) the weights associated with each predictor variable, and (2) the critical cutoff score for assigning objects into the alternative criterion groups" (Kachigan, 1991, p. 221). In other words, "the discriminant functions uses a weighted combination of those predictor variable values to classify an object into one of the criterion variable groups--or, alternatively, to assign it a value on the qualitative criterion variable" (p. 219).

The cutoff score is the value used to decide group membership. The discriminant function is used to calculate a score for each case in the analysis based on that person's values on the individual predictor variables (Kachigan, 1991, p. 221). For example, when there are two criterion groups, the "objects with discriminant scores greater than

the cutoff score are assigned to one of the criterion groups, and objects with discriminate scores less than the cut off score are assigned to the other criterion group" (p. 220).

The discriminant analysis produces several outputs to help interpret the results of the analysis. These include the within-groups correlation matrix, the canonical discriminant functions, the structure matrix, the unstandardized canonical discriminant function coefficients, and the classification results.

The within-groups correlation matrix "shows the strength of the relationship between corresponding pairs of variables for the cases within each of the groups identified for the analysis" (Conti, 1993, p. 93). Each groups identity is preserved, and the "correlations for each variable are calculated based on these groups" (p. 93). This identifies any shared variance between the groups.

The canonical discriminant function contains several pieces of information about the analysis (Norusis, 1988, p. B-14). It reports eigenvalues, chi-square information, and the canonical correlation. Eigenvalues correspond to the equivalent number of variables represented in the discriminant function (Kachigan, 1991, p. 246) with large

eigenvalues indicating useful functions. The chi square "indicates the likelihood that the groups of the means are the same" (Conti, 1993, p. 93). The canonical correlation "tells how useful the discriminant function produced by the analysis is in explaining the group differences; squaring the canonical correlation provides the proportion of variation in the discriminant function explain by the groups" (p. 93).

One of the key statistics of the discriminant analysis is the structure matrix.

> This matrix contains correlation coefficients that indicate how closely a variable and the discriminant function are related. A high coefficients indicates that the information contained in the function is similar to the variable. A low coefficients shows that the overall function and the variable have very little in common. The variables with the highest correlations are used to name the discriminant function. (Conti, 1993, p. 94)

The unstandardized canonical discriminant function coefficient's information is used to compose the discriminant function (Conti, 1993, p. 94). "It indicates the variables and coefficients that are to be included in each function" (p. 94). There is always one less function than number of groups used in the discriminant analysis. The listed variables and their matching coefficients and signs

are put into a mathematical statement to express the function.

> We compute the discriminant scores by taking the original value for a case on each variable and multiplying it by the coefficient for that variable; we then add these products along with the constant term.(The constant term is an adjustment for the means, so that the mean discriminant score will be zero over all cases.(Klecka, 1980, p. 24)

Each case is classified into a group by this discriminant score procedure.

The classification table "indicates the accuracy of the discriminant function in correctly placing the cases used in calculating the discriminant analysis in their original group" (Conti, 1993, p. 94). "Perhaps the most meaningful evaluation of the discriminant function will be in terms of the actual errors of classification, both in number and in type" (Kachigan, 1991, p. 230).

As with other statistical procedures, criteria need to be stated before the analysis for the purpose of judging if the outcome is good and useful (Conti, 1993, p. 93). One good criterion is that the discriminant function produced by the analysis is describable using the variables in the structure matrix with a coefficient of at least .3 (p. 93). Another criterion is that the discriminant function

correctly classify a certain number of cases above that which is expected by chance alone (p. 93). Chance placement refers to the probability of a case being placed in a group randomly (Klecka, 1980, p. 50). For example, if there are two groups in the analysis, the prediction of correct placement by pure random assignment is 50%; if there are 4 groups, the expected correct placement from random assignment is 25%. Thus, "the percentage of cases classified correctly is often taken as an index of the effectiveness of the discriminant function" (Norusis, 1988, p. B-13), and "the proportion of cases correctly classified indicates the accuracy of the procedure and indirectly confirms the degree of group separation" (Klecka, 1980, p. 49). As such, this placement rate should be much higher than chance in order for the discriminant analysis results to be judged as good and useful.

In the discriminant analysis to answer the ninth research question, the National Academic Advising Association (NACADA) members were grouped according to their learning strategy preference and the discriminating variables were the items from the decision-making styles instrument, the items from ways of knowing scale, and dummy variables for the cultural appreciation instrument. In order

to explore the interaction of these four concepts with discriminant analysis, the decision-making styles items and the ways of knowing items were used as discriminating variables because they are interval measures based on a Likert-type scale. Both the learning strategy preference instrument, ATLAS, and the cultural appreciation instrument, CALL, are nominal measures that classify respondents into groups. ATLAS was used for placing the NACADA members in groups rather than grouping them with CALL because ATLAS has been used in many more research studies than CALL (see Conti, 2009). In order to include CALL in the analysis, dummy variables were created for the various levels of CALL. However, since the dummy variable for one level must be left out of the analysis because they are not independent of each other (Kachigan, 1991, p. 190), the dummy variable for the Lynn-level of CALL was not included in the analysis.

Complete data were available on 358 of the 360 NACADA members participating in the study. They were grouped as follows: Problem Solvers–146, Navigators–126, and Engagers–86. There were 48 discriminating variables. These were the 25 items from the GDMS, the 20 items from the ATTLS, and the 3 dummy variables from CALL. The analysis was run using the Wilks' lambda method for selecting the

variables for inclusion in the discriminant function. Wilks' lambda is a stepwise procedure (Klecka, 1980, p. 54) that systematically adds variables to the discriminant function through a series of steps in which variables that account for the most variance are added to the equation "continuing until the inclusion of another variable would account for only an insignificant amount of variance in the criterion variable" (Kachigan, 1991, p. 153).

Because this study is part of a line of inquiry concerning cognitive styles, the criteria for judging the usefulness of the discriminant function were the same as those used by Sanders (2008). There were two criteria. The first was that the function had to be at least 75% accurate in classifying the NACADA members in their correct groups. If this criterion was met, then the second criterion was that the structure matrix had to clearly describe the process that separated the groups. "Although 75% is more than double the chance placement rate of 33.3%, the judgement criterion was set at this level because any formula that cannot correctly place at least three-fourths of the participants does not have any practical use" (p. 144) in professional setting such as academic advising.

The analysis produced two discriminant functions

because discriminant analysis calculates "one fewer discriminant functions than the number of criterion groups" (Kachigan, 1991, p. 226). With three groups, "the first of these functions will discriminate the members of one of the groups from the members of the other two groups. The second discriminant function will then discriminate between the remaining two groups" (p. 226). The discriminant functions contained only a few variables even though 48 discriminating variables were used in the analysis:

D_1 = .60(GDMS_6) - .39(ATTLS_14) + .48(ATTLS_16) - 2.18.
D_2 = .58(GDMS_6) + .61(ATTLS_14) - .08(ATTLS_16) - 4.48.

One item in the functions was from the GDMS, and two were from the ATTLS. Item 6 of the GDMS is from the Intuitive scale and deals with making decisions based upon instincts. Both of the items from the ATTLS are from the Separate Knowing scale. Item 14 deals with strengthening one's position by arguing with those who disagree. Item 16 deals with arguing with the authors of books to try to figure out logically why they are wrong.

The discriminant functions were very weak in discriminating among the groups. They correctly classified only 43.5% of the participants into their actual group (see

Table 23). The accuracy was low and nearly the same for all three groups. The weakness of the discriminant functions was reflected in eigenvalues of .063 for the first function and .042 for the second function. "A 'good' discriminant function is one that has much between-group variability when compared to within-group variability" (Norusis, 1988, p. B-13), and these low eigenvalues, which represent the ratio of the between-groups to within-in groups sums of squares (p. B-13), indicate that they are not "good" functions.

Low canonical correlations also showed this weakness. The canonical correlation is "a measure of the degree of association between the discriminant scores and the groups" (p. B-14). The canonical correlations were .244 for the first function and .201 for the second function. The canonical correlation is referred to as eta, and when eta is squared, it "represents the proportion of the total variance attributable to differences among the groups" (p. B-14). The eta^2 for the functions indicated that the first function explained 5.9% of the variance in the groups, and the second function explained 4% of the variance in the groups. Thus, neither of the functions accounted for an appreciable amount of variance in the groups.

Because the discriminant functions were so weak and

were not able to classify at least 75% of the NACADA members in their correct groups, the second criterion of examining the structure matrix was not used. Based on the established criteria for evaluating the analysis, the discriminant functions were judged as not being useful for discriminating among the groups. Overall, this lack of usefulness indicates that there is no meaningful interaction among the cognitive processes of decision-making styles, ways of knowing, cultural appreciation, and learning strategy preference.

Table 23: Classification Results for ATLAS Groups from Discriminant Analysis with GDMS, ATTLS, and CALL Discriminating Variables

Actual Groups	Predicted Groups			Total
	Navigator	**Pro. Sol.**	**Engager**	
Frequency				
Navigator	54	42	30	126
Problem Solver	40	61	45	146
Engager	22	24	40	86
Percentage				
Navigator	42.9	33.3	23.8	100
Problem Solver	27.4	41.8	30.8	100
Engager	25.6	27.9	46.5	100

CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary of Study

Professional advisors, faculty advisors, and student advisors have taught and guided students since the first institutions in higher education started in the United States. Higher education is as diverse as the students that it serves. The academic advisors have to be just as diverse as their students to properly teach, advise, and guide students to make decisions for their education and to prepare them for future decision in the workforce after their formal education. The National Academic Advising Association has been teaching and guiding academic advisors since 1977 on developing their professional skills to understand and guide their advisees.

Academic advisors help students with the process of decision making, of making sense of their world, of understanding how they go about learning, and of understanding how to appreciate diversity in their world. If advisors are to help students in these areas, academic advisors should be aware of the cognitive processes of how they make sense of the world and of how they approach learning situations. Being involved in this metacognitive

process, advisors will not only understand themselves better as learners but understand their advisees. Although there are important individual differences in these cognitive processes, there is currently no information about academic advisors' decision-making styles, ways of knowing, learning strategy preferences, and level of cultural awareness.

With student development being an area that changes frequently, professional development activities are an on-going need. However, it will be difficult to plan professional development activities for academic advisors related to the cognitive processes of decision making, ways of knowing, learning strategy preferences, and cultural awareness without a current profile of academic advisors in these areas.

Therefore, the purpose of this study was to describe the decision-making styles, ways of knowing, learning strategy preferences, and cultural awareness levels of the members of the National Academic Advising Association (NACADA). This was done by surveying the members of NACADA related to their decision-making style by using the General Decision-Making Style survey (GDMS). Their ways of knowing was measured with the Attitudes Toward Thinking and Learning survey (ATTLS). Their learning strategy preference was

identified by using the Assessing The Learning Strategies of AdultS (ATLAS) instrument. Their cultural awareness level was identified with the Cultural Appreciation in Lifelong Learning (CALL) instrument. In addition, data were gathered on the following demographic variables: gender, age, race, education level, advising experience, role in institution, type of institution, degrees offered at the institution, region, and size of institution.

There were 360 National Academic Advisor Association members that participated in this descriptive study. The data for this study were collected by posting a link to the surveys on the selected committees of the National Academic Advising Association's (NACADA) website for the Advising Adult Learners Commission, Advisor Training/Development Commission, and Advising Administration Commission and by requesting participation from NACADA members who attended the 2008 national conference.

To construct a profile of the members of the National Academic Advising Association on their decision-making styles, ways of knowing approach, learning strategy preference, and cultural awareness level, several analyses was executed using descriptive statistics. Analysis of variance and the chi-square analysis were used to examine

the relationships of members' decision-making strategy, ways of knowing approach, learning strategy preference and cultural awareness level with the demographic variables. Discriminant analysis was used to investigate the interaction between the primary decision-making style, the ways of knowing, preferred learning strategy and cultural awareness level. In addition, factor analysis was used to examine the structure of the GDMS and the ATTLS.

Summary of Findings

The reliability for the GDMS and the ATTLS was analyzed, and factor analyses were conducted on each of these instruments before the data were analyzed to address the research questions. The Cronbach's alpha for each of the instruments confirmed the reliability for the use of the instruments with the NACADA members. The factor analysis of the GDMS confirmed the instrument's original five decision-making styles. The factor analysis for the ATTLS confirmed that its two major constructs could be used with the NACADA group as they were proposed by the instrument's authors.

Profiles

After examining the demographics variables, the cognitive styles profiles of the participants were described. The first four research questions asked for the

profile of the NACADA members by using the General Decision Making Styles (GDMS), Attitudes Toward Thinking and Learning survey (ATTLS), Adult Learning Strategies of AdultS (ATLAS), and Cultural Appreciation in Lifelong Learning (CALL) instruments.

Nearly three-fourths (70.1%) of the participants used the Rational style as their primary decision-making style. Only a small group used the other steps in the primary decision-making style: Intuitive (11.7%), Dependent (7.2%), Avoidance (.01%), and "Mixed" (9.7%). None used the Spontaneous style as their primary style.

The overall scores for both scales of the ATTLS were very similar. The mean for Connected Knowing was 50.41 while the mean for Separate Knowing was 47.75. They are slightly above the midpoint of 40 for the scale.

The 358 NACADA members who completed ATLAS were as follows: Problem Solvers–146 (40.6%), Navigator–126 (35%), and Engagers–86 (23.9%). The NACADA members were different from the norm in that there were 31.5% more Problem Solvers than anticipated and 33% less Engagers than anticipated.

Of the 346 NACADA members who completed CALL, the results showed as follows: Chris–129 (35.85%); Lee–93 (25.8%); Alex–77 (21.4%); and Lynn–47 (13.1%).

Relationships

Research questions five through eight investigated the relationship of the NACADA participants's demographic variables to the four instruments in the study. The demographic variables were categorized as either personal, professional, or institutional. The personal variables were gender, race, and age. The professional variables were education, experience, and primary role in the institution. The institutional variables were institutional type, size of institution, highest degree offered, and NACADA region.

ANOVA was used to analyze the relationship (a) between decision-making styles as measured with the GDMS and ways of knowing as measured with the ATTLS and the (b) demographic variables. Separate one-way ANOVAs were calculated (a) for each of the five scales of the GDMS and each of the two scales of the ATTLS (b) with each of the demographic variables. Although numerous ANOVAs were calculated, almost no significant differences were found. For the GDMS, only 3 of the 15 analyses were significant for the personal variables. Although significant differences were found for gender and the Intuitive style, for race and the Avoidant, and for age and the Dependent style, an analysis of the groups indicated that the difference had questionable

practical significance. Only 1 of the 15 analyses were significant for the professional variables. As with the personal variables, the difference for experience and Dependent style had questionable practical value. Only 1 of the 20 analyses were significant for the institutional variables. However, the Scheffe post hoc analysis indicated that although the difference did not occur by chance for the Avoidant style and the NACADA regions, no differences could be found among the groups. Thus, although a few isolated differences were found to be significant, none were of a practical significance that could be easily identified.

For ways of knowing, separate ANOVAs were calculated for the Connected Knowing scale and for the Separate Knowing scale for each of the personal, professional, and institutional variables. No significant differences were found for any of these 20 analyses.

Chi-square was used to analyze the relationship (a) between learning strategy preference as identified with ATLAS and between cultural appreciation as identified with the CALL and the (b) demographic variables. Separate two-dimensional chi-squares were calculated (a) for each of the instruments (b) with each of the demographic variables.

Only 1 of the 10 analyses with ATLAS and the

demographic variables was significant. A significant difference was found with ATLAS and primary role in the institution. However, the analysis of the standard residuals indicated that although the distribution was not due to chance, it was not strong enough to have a practical difference.

As with ATLAS, only 1 of the 10 analyses with CALL and the demographic variables were significant. A significant difference was found with CALL and age. The standardized residuals revealed that for the Chris group there were more in the 23-35 years-old group than expected while there were less than expected in the 47-55 years-old group.

Overall, numerous analyzes were conducted to investigate the relationship between the four measures of cognitive style and the demographic variables. Almost no significant differences were found, and when differences were found, the differences were so small that either they had no practical significance or they could not be identified.

Interactions

Discriminant analysis was used to investigate the interaction among the participants' decision-making style, way of knowing preference, learning strategy preference, and

cultural appreciation level. This procedure found that there were no meaningful interaction among these four cognitive style dimensions.

Conclusions

Based on findings of this study, conclusions and recommendations were drawn related to decision-making styles, ways of knowing, learning strategy preferences, and cultural awareness and cognitive processes:

Decision-Making Styles

1. The GDMS is a stable instrument that measures five divisions of decisions making styles.
2. The National Academic Advising Association members used a very logical approach for decision making.
3. Career advising is a logical step in decision making and academic advising.

Ways of Knowing

1. There is no practical difference due to gender or other demographic variables for academic advisors and the ways of knowing.
2. Professional women such as those in NACADA do not approach knowledge in the way originally conceptualized for ways of knowing.

Learning Strategy Preferences

1. Academic advisors have a strong tendency to generate alternatives in their approach to new learning.
2. Academic advisors tend to initiate learning activities from the cognitive domain rather than from the affective domain.

Cultural Awareness

1. Academic advisors tend to be open to cultural awareness.
2. Although NACADA members tend to support diversity, the demographic makeup of the professional association is not very diverse.

Cognitive Processes

1. Decision-making style, ways of knowing, learning strategy preferences, and levels of cultural appreciation are separate dimensions of cognitive styles.

Decision Making

The GDMS

Before the decision-making data from the NACADA members were analyzed, a factor analysis was conducted to confirm the factor structure of the General Decision-Making Style (GDMS) instrument. The results of this analysis were exactly the same as for the test group that was used to create the instrument; that is, the analysis found five factors with each item in the GDMS loading in its correct factor. This suggests that the instrument is very stable. The GDMS was developed with information from a group of 1,441 male military officers, 84 MBA students at a large Midwestern university, 229 undergraduate business students at a large Midwestern university, and 189 engineers and technicians from research and development facility of a U. S. industrial

firm (Scott & Bruce, 1995, p. 821). All of these groups were samples with specific characteristics, and all of them were highly educated. This coincides with the NACADA members who are highly educated. The respondents of NACADA members have at least a bachelors degree and more than three-fourths have a master degree or above. The sample for the NACADA was smaller, but it was of adequate size for both representing the overall organization and for conducting a factor analysis. Since the 5 factors of the instrument were confirmed exactly as originally developed, it was appropriate to use the GDMS in this study with NACADA members, and this study can contribute to confirming the validity and stability of the GDMS as has been suggested by others (de Bruin, Fischhoff, & Parker, 2007; Galotti, 1995; and Thunholm, 2001). Thus, the GDMS can be accurately used with the NACADA members.

Academic Advising and Decison-Making

The findings of this study showed that a little over 70% of the 360 participants use the Rational approach to academic advising. It must be noted that there were none who used the Spontaneous style as their primary decision-makers style. This is encouraging for the field of academic advising, because students would not want an advisor that

makes a spontaneous decisions or who goes through the decision-making process by just wanting to get done as soon as possible. In such a situation, students would feel like they were bothering the advisor and that the advisor just wanted them out of their office as soon as possible. On the other hand, those advisors who primarily use the Rational style on decision-making look for alternative paths and decisions when trying to guide their advisees to make a wise and logical decision when exploring the academic choices and occupational implications of the academic decisions that they are considering. With this approach, "advisors can encourage academic and occupational exploration by helping students view this process as desirable and legitimate" (Gordon, 1992, p. 72). Advisors can often point out to students where they are in their decision-making process and can help them question what the next logical step should be and can help them discover where it can lead them.

Grites (1979) focuses on the interaction dimension of advising by stating that academic advising is "a decision-making process during which students reach their maximum educational potential through communication and information exchanges with and advisor" (p. 1). Crockett (1978) states that "academic advising assists students to realize the

maximum education benefits available to them by helping them to better understand themselves and to learn to use the resources of an educational institution to meet their special educational needs" (p. 10). These definitions focus on securing the most productive outcomes from the advising relationships by the students learning how to make objective and logical decisions toward their education and even understanding themselves. Crookston (1972) underscores the importance of the advising process by connecting academic advising to teaching. "Advising is concerned not only with a specific personal or vocational decision, but also with facilitating the student's rational processes, environmental and interpersonal interactions, behavioral awareness, and problem-solving, decision-making, and evaluation skills" (p. 12).

The common conception is that academic advisors help students with scheduling of classes, watch the students retention status, help students when their grades are going down, and help students in choosing of major. However, for many students the choice of major is closely associated with choice of career. Dealing with career decisions and choices today is a huge undertaking for their advisors and advisees. As the Western New Mexico University Advising Task Force

(2001) suggests on its web-site, integrating educational and career goals should be a logical, decision-making process:

> Academic advising goes beyond the clerical functions of scheduling classes and preparing degree plans. Good academic advising assists students in clarifying personal and career goals, developing consistent educational goals, and evaluating the progress toward established goals. Academic advising utilizes the resources of the University and refers students to the appropriate academic support services. It is a decision-making process in which the sharing of information between student and advisor promotes responsible and appropriate choices and facilitates a successful academic experience. (Advising Task Force, 2001)

Professional academic advisors in higher education are expected to provide academic advising in addition to other task that are not directly related to academic topics. Overall, attention is focused on helping students make a logical decision on selecting an academic major and career (Winston, 1996).

Career Services and Guidance

In most institutions of higher education, the area of "career guidance" is listed under the department of Student Services. Career guidance was developed "to help people choose vocations. The early, straightforward procedures used in helping individuals choose occupations have evolved into diverse strategies, incorporating career decision making and

life planning" (Zunker, 2002, p. 21). For many years, this service was known as the "placement office." Its primary function was considered with helping students obtain jobs after graduation. The purposes of student affairs office include helping students learn about their own interests and skills and helping students develop plans that fit their career and personal needs. The staff in this area work closely with students, faculty, corporations, and community and government agencies to uncover opportunities (p. 9). The career guidance program often includes an emphasis on career planning, assessment, cooperative education, internships, placement, and alumni support. The office is sometimes part of academic affairs, but most frequently it is administratively placed under the student affairs function. On some large campuses, career placement are decentralized into each of the major academic units, especially the professional colleges (Gordon, 1984, p. 449). Regardless of where it is placed in the organization, its central function remains the same; it is to help students in their decision-making concerning jobs and life after graduation.

If one assumes that the higher-education experience does more than prepare students to get a job, then it also follows that academic advising leads students to examine the

various roles and options of life. This approach to the advising function requires that the academic advisor be an active participant in the career and life planning process (Creamer, Creamer, & Brown, 2003; Nuss, 2003; Upcraft & Schuh, 1996). Not only should advisors be aware of the quality of human development and the various roles and options in which the student must function, but also the advisor must assist the student in utilizing the variety of institutional options that can meet the challenges provided by those roles (Love, 2003, p. 522). This coincides with the second Core Value of the NACADA: "Advisers are responsible for involving others, when appropriate, in the advising process" (Gordon, 2008, p. 528). This Core Values' states:

> Academic advisors must develop relationships with personnel critical to student success, including those diverse areas as admissions, orientation, instruction, financial aid, housing, health services, athletics, academic department, and registrars's office. They must also establish relationships with...personnel in disability services, and career development. (p. 529)

It is difficult for any academic advising division to sufficiently address the plethora of students needs, wants, and legitimate exceptions for assistance in higher education. However, NACADA is in the process of addressing this overwhelming dilemma. NACADA's members have a rational

and logical approach in their decision making to guide their advisees and themselves in helping students make appropriate decisions whether it might be in academic advising or career services. If members of NACADA can communicate the needs of their institutions at the national and local conferences, their rational and logical approach to decision making has the potential to ease the dilemma so that academic advising and career services can cooperate in guiding advisees to reach their academic and career goals.

Ways of Knowing

Contrary to the theory base and literature on the ways of knowing upon which ATTLS was based, there is no practical difference due to gender or other demographic variables for the ways of knowing for professional academic advisors. The research by Gilligan in the 1970's and by Belenky and her colleagues in the 1980's concluded that males and females are different in their ways of knowing. However, this study and the recent study by Sanders (2008) showed no practical difference in the ways of knowing between males and females with the ATTLS. The members of NACADA are diverse in their way of knowing. Although the literature suggests that gender difference exist on ways of knowing (Galotti et al., 1999), NACADA members were widely dispersed in a general bell-

shaped or chance pattern in their scores on both scales of the ATTLS, and their scores covered nearly the entire range of problem solvers on the scales. Moreover, when demographics variable are combined with these scores, the NACADA members cannot be stereotyped by demographic variables for their preference for ways of knowing based on the ATTLS instrument. Neither of the way of knowing approaches is used by the female population more than it is used by their male counterparts. Consequently, women members of NACADA cannot be expected to have tendency toward one type of way of knowing based on their gender.

One possible reason for this finding which conflicts with the original theory base for ATTLS is that society has changed since the theory base and ATTLS were developed in the early 1970's and 1980's. The roles of women have changed, dramatically in terms of their social conditions, economic conditions, and political conditions. For example, while the Brandy Bunch represented a “modern” family in the l970's, many women today are in the workforce and/or are heads of households. Indeed, NACADA is overwhelmingly made up of women practicing a profession that requires a high level of academic preparation and time commitment. In addition, they average 18 years of experience in the filed.

Political changes have created an environment supportive of these changing roles for women in the social and economic areas as demonstrated by the high education levels and professional status of the NACADA members. In the 1970's women were fighting for the passage of Equal Rights Amendment, which was finally passed by congress in l972 and sent to the states for ratification. In 2008, a woman was a major candidate for the most powerful office in the country and in the world. Although Hillary Clinton failed in her bid for the presidency, the success of the campaign is a triumph for the accomplishment of women and a symbol that the first decade of the 21st Century is different from the last quarter of the 20th Century.

These changes can be summarized as follows:

> Higher education system may have evolved subsequent to studies conducted in the late 1980's and early 1990's (see Belenky et al., 1986; Light, 1990) and earlier. It is possible that female learners may have changed their styles, unencumbered by the past and social role constraints. Alternatively, past research may have been inaccurate in its characterization of gender-based learning differences. (Backhaus & Liff, 2007, p. 460)

The findings from research related to gender are mixed (Backhaus & Liff, 2007). For example, while some of the research has suggested that learning styles among women are

not suited well for the traditional lecture structure because "women are more collaborative and less self-confident than men" (p. 460). However, this may be detrimental because the analytic style may not transfer well into the important divergent thinking and critical thinking needed in real-world jobs such as in the area of business (p. 461). Recent findings showed that women tend to have a more cognitive styles than men and that this cognitive style is associated with greater academic achievement for women than men (p. 460).

Academic advisors constantly use their learning styles to look at different and new ways to process information. This is similar, to the situation for mangers; therefore,

> Even if cognitive style is a stable characteristic, management practice can be improved only by the ability to be ambidextrous in our thinking and processing. There are times when a manager must be able to think analytically and holistically about the potential outcomes of a decision.(Backhaus & Liff, 2007, p. 460)

Learning Strategies Preferences

Higher education is an ever-changing world. In this dynamic environment, advisors need to be able to look outside the box for alternative resources to help students develop a plan for reaching their highest educational potential. The personal learning strategies for a large

number of NACADA members prepare them well for this task. A larger than expected number (40.6%) of the academic advisors are Problem Solvers, which means that they initiate learning tasks from the cognitive domain (Conti, 2009, p. 893). A large group (35%) are also Navigators. Both Problem Solvers and Navigators look externally for available resources. They differ in that the Problem Solvers will "immediately begin to generate alternatives based on the resources" (p. 894) whereas Navigators will begin "immediately to narrow and focus on their resources" (p. 893). While these are different approaches, they both prepare the advisor for helping advisees to address the complicated world they face.

The smallest learning strategy preference group was the Engager. They made up only about one-fourth of the NACADA group, and this representation was less than could be expected in the general population. Engagers initiate learning from the affective domain and rely heavily on building relationships (Conti, 2009, p. 894). While this approach may be successful for counseling and recruiting, the demands of academic advising with the more analytical approach may be dissuading some who have an Engager learning strategy preference from entering the field.

Counseling and recruitment are areas in higher

education that requires contacts that are designed to "convey information but, more important, they are intended to establish and develop a relationship" (Black, 2003, p. 84). Recruiters become the "trust agents" of the university, and they persuade the prospective student in taking action to apply to their university (p. 84). This distinction between the basic nature of academic advising and the areas of counseling and recruitment may partially explain why less Engagers are drawn to academic advising than expected. Future research should be conducted to see if Engagers are over-represented in the areas of counseling and recruitment.

Adult Learners

There are several forces changing in higher education, but one area that affects education is the economy. When the economy is good, fewer adult students seek degrees. When the economy is bad and unemployment is high and as it is now, many adults turn to higher education. According to the National Digest of Education Statistics (2007), greater numbers of adults are seeking college degrees than in years past. Currently, 18% percent of students are 24 years or older, and 36.9% of undergraduate students are older than 24 years old.

Adults enter higher education for many reasons. Several

adults entering now are veterans from the Iraq war. "In light of recent activity with the Iraq War, many campuses are seeing returning veterans as a new micropopulation" (Hunter & Kendall, 2008, p. 142). Though the returning numbers of veterans are not as great as after World War II, these veterans are coming back to a sagging economy and are trying to improve on their educational opportunities through the veterans benefits that they receive. Whether the adult student is coming to school from war, whether if they are displaced workers returning to enhance their education, or whether they are entering for other reasons, they all have different characteristics and needs. Most of these adult learners are in a transition stage of their life. These adult learners can and do present special challenges to colleges and universities worldwide (Bowden & Merritt, 1995).

Academic advisors need to be aware of the difference between an adult student an the traditional student. Adult learners, for the most part, have already found their identity and purpose in life and they want to put their life experiences and past learning experiences into their new learning experience. The traditional student is looking for a purpose in life as well as trying to find an identity for

themselves that differs from their parents (Merriam & Caffarella, 1999).

In its report "Educational Principles That Works for Adults Who Work," the counsel for Adult and Experiential Learning (CAEL)(2000) suggests what academic advisors and institutions should do to help adult learners. Skorupa (2002) outlines these six task principles:

1. Overcome barriers of time, place, and tradition to create lifelong access
2. Address their career and life goals
3. Assess skills acquired through the curriculum and experience
4. Enhance their capabilities to be self-directed learners
5. Access information technology to enhance the learning experience.
6. Engage in strategic relationships and collaborations with employers and other organizations (p. 3).

These "educational principles" reflect the principles of andragogy and self-directed learning as declared by Knolwes (1970) and Smith's (1982) concept of lifelong learning. Academic advisors seek to teach their advisees to be self-reliant and to develop the process for lifelong learning. It is an important step to "enhance their capabilities to be self-directed learners" (Skorupa, 2002, p. 3). Once that is accomplished, the other areas that need to be provided can come more easily to the adult learner and

the advisor.

In order to accomplish this type of learning, individual differences for each learner needs to be addressed. "Learning strategies offer a means of addressing individual differences" (Conti, 2009, p. 887). ATLAS with its descriptions of the learning strategy preference groups that accompany it offers "a tool to help learners identify, clarifies, and explain their actions in learning situations" (p. 894). It is not just the advisees that need to know their learning preference, but the academic advisors as well need to be self-directed learners in their profession and know their learning preferences to guide their adult learners in accomplishing their goals, just as with faculty, academic advisors may need to become aware of their own cognitive styles and consider how their perspectives effect their professional actions (Backhaus & Liff, 2007, p. 463).

Continuing Professional Education

The National Academic Advising Association's Core Value #6 states that "advisors are responsible for their professional practices and for themselves personally" (Gordon, 2008, pp. 526-528). As in any profession, academic advisors have to stay abreast of their profession's changes and updates. Several professions such as Certified Public

Accounts and Financial Managers are required to acquire continuing professional education hours periodically to keep their license or certificate. Even public school teachers have to keep their certifications current. Though advisors are not licensed or certified, they are in a profession that is changing constantly.

Those seeking professional education hours or credit for a vocation use one or more of Houle's (1980) three major modes of learning (p. 31): (a) creating new ideas, techniques, and strategies; (b) instruction; and (c) performance in learning. Of these three, the mode of performance in learning is extremely important for the professional development of academic advisors because it is the:

> Process of internalizing idea or using a practice habitually, so that it becomes a fundamental part of the way in which a learner thinks and undertakes his or her work. (p. 32)

This concept is directly related to learning strategies preference. When advisors wish to expand on their performance in learning or teaching, they could benefit from knowing their own learning strategy preference. All three learning strategy preference groups are represented in NACADA although they are not distributed equally or in the

same pattern as in the general public. There are more Problem Solvers and Navigators who look externally for solutions, and a smaller number of Engagers who rely on their own feelings related to learning. However, NACADA has not had this information and has not been using this type of information in planning its continuing professional education actives. Likewise, the members probably do not know about their own learning strategies and characteristics. Academic advisors could benefit from knowing if they are Problem Solvers who prefer leaning their "own way without rigidity or didactic orders" (Conti, 2009, p. 894). Likewise, Navigators could benefit from understanding and reflecting on their "demand for order and structure," (p. 893). Similarly, Engagers could benifit from knowing that they "are not interested in developing new or abstract ways of doing things; instead, they will often take the path of least resistance to get to a final result or they will utilize shortcuts created by others because these things allow more time and energy for concentering on the dynamics of the learning process" (p. 894). As Smith (1983) has pointed out, awareness of this personal approach to learning is a vital step in learning how to learn. Thus, to be an effective academic advisor, leader in NACADA or adult

learner, this knowledge needs to be known.

The learning strategy preferences of academic advisors and their advisees is an area that needs to be implemented whenever possible. By knowing their advisees's learning strategy preference, academic advisors would be in a position to address individual difference in their advisees and truly make their advising duties more successful and their advisee's educational experience more enjoyable.

NACADA's national and regional conferences could benefit by taking into consideration the learning strategy preferences of the members to effectively conduct and organize the workshops that are offered at each conference. As Knox (1993) explains, continuing education enables practitioners and academic advisors to progress from being an amateur to being an expert in their field. This is accomplished by formal and informal education furnished by professional associations such as NACADA and by other providers such as the universities themselves.

> Every member of a profession (even a person who follows a traditional sequence of study and practice) has a distinctive style of lifelong learning influenced by an individual background, unique combination of character traits, and the special circumstances of his or her immediate environment, including stimuli provided by people and institutions who seek to advance continued education. As personality and circumstances

> change, so does this pattern of learning. (Houle, 1980, p. 77).

Cultural Awareness

CALL

America is becoming more culturally diverse each day, and its population change is reflected in higher education. Fortunately, a large segment of academic advisors have a cultural awareness level that should allow them to interact successfully with culturally diverse students. Approximately 60% of the academic advisors are in the Chris and Alex groups; they have a view of social responsibility that perceives diversity issues as related to social causes (Tapp, 2002, p. 144). As a result, this group is open to addressing knowledge and awareness issues related to diversity (p. 178). When the Lee group is added, over five-sixths of the academic advisors are favorably disposed for addressing issues of cultural diversity because while those in the Lee group "may be lacking in knowledge of cultural issues [they] may have a attitude that causes them to be open to developing greater cultural appreciations" (p.181).

Thus, Academic advisors can expect to encounter advisees who are sensitive to the needs of cultural diversity. Of the 346 members of NACADA that completed the

CALL, 129 (35.85%) was Chris, Alex–77 (21.4%), Lee–93(25.8%) and Lynn–47 (13.1%). Even though there were more in the Lee group than in the Alex group, over half (57.25%) are in the group supporting a communal approach to issues as opposed to an individualistic approach, and another one-fourth (25.8%) are open to developing a greater appreciation of cultural diversity. Each of the broad groups of the communal approach and the individualistic approach are made up of two of the CALL groups, and for each of those broad groups, the groups that supported diversity the most was the largest. Those in the Chris group, which made up over one-third of the sample, is aware and "understand the role culture has played in the development of an identity and worldview of those in culturally diverse groups" (Tapp, 2002, pp. 179-180). Those in the Lee group, which made up one-fourth of the sample, "acknowledge that they have very little knowledge of other ethnic groups, but they are aware that being born a minority in this society brings with it far more challenges than faced by white people" (pp. 175-176). When these are combined with the Alex groups, which made up approximately one-fifth of the sample and which "appricate[s] cultural diversity but believe[s] that multicultural groups can benefit by integrating some mainstream values into their

life style" (p. 174), they indicate that most of the NACADA members either support or are open to cultural diversity. Only a small group of NACADA member "oppose valuing cultural diversity and believe too much attention has been given to multicultural issues" (p. 175). Although NACADA members as a group support cultural diversity, they vary in their degree of support and in how they specifically view diversity. Therefore, it is essential that advisors understand where they are on the CALL chart to be able to understand each individual that comes into their office that is of different culture.

Advising and Cultural Awareness

November 4, 2008, was a defining moment in the United States of America. For the first time in history United States citizens elected a president who identifies himself as an African American and who also has a Muslim name. This election notes great progress in race relations. Clayton-Pedersen (2008) talks about how during his candidacy, Barack Obama could not embrace "the unique strengths that his binational, biracial background would bring to the presidential role [nor could he underline] the broad worldview he has gained from contact with people of different backgrounds without" (p. 1) percussions or fear of

alienating some constituencies. This shows that even with a minority as a president, minorities still have to tread easily and cautiously about diversity.

There is great diversity not only between racial and ethnic groups but also within the groups themselves. Each minority group springs from a community that has its own customs, traditions, and values. The immediate and extended family provides a support system that has great influence on many minority students' lives. Many minority students are the first in their family to attend college, and this fact places enormous pressure on them to succeed. These and many other issues are the keys to responsive advising. As the proportion of minority students increase dramatically in the future, identifying and dealing with the issues and characteristics of these students will take on special significance.

Academic advisers who work with students from another race and culture must honestly appraise their own prejudices and biases. To become culturally competent, advisors cannot merely increase awareness and knowledge about those from other cultures. "They must also recognize themselves as cultural creatures and realize that they must first know themselves to appreciate the cultural lenses through which

they interpret others" (International Students, 2008, p. 1).

One area of diversity that needs to be addressed by NACADA and universities across the country is the hiring practices of academic advisors if they wish to become culturally diverse. Of the 360 members of NACADA that took part in this study, 301 where women, and 59 were males. Moreover, 84.4% (304) were Caucasians. As of February 28, 2009, NACADA had 10,724 members. Of those members, 7,336 were female (68.4%), and 62.4% were European American/White (NACADA, 2008). It is not just NACADA that has a disproportionately large number of females and Caucasians. According to the Digest of Education Statistics (2007), as of the Fall of 2007 there are 3,561,428 employees in degree-granting institutions; of these 1,911,078 (53.7%) were females, and 1,334,556 (69.8%) of those females are Caucasian. Thus, while there are a large number of women employed as academic advisors, they are overwhelming white.

Advisors' diversity in hiring represents the institution's values concerning equity. Any institutions that describe themselves as committed to diversity while having an advising center with demographics that suggest otherwise may be seen as disingenuous and deceptive (Priest & McPhee, 2000). Having diversity among its academic advisor

could help "the institution develop vital relationships with diverse communities outside and across campuses" (Smith, 2009, p. 14) as well as with other areas within the universities.

"Diversity among academic advisors is essential for creating an environment that will attract persons from diverse backgrounds" (Priest & McPhee, 2000, p. 112). Until sufficient diversity exist in campus departments and divisions, members of under-represented groups will struggle to be seen as individuals and not as tokens in the university community. Universities need to create an atmosphere that communicates cultural openness to students. The sociological concept of homophily provides insights of how this can be done.

Homophily is "the principle that a contact between similar people occurs at a higher rate than among dissimilar people" (McPherson, Smith-Lovin, & Cook, 2001, p. 416). Terms of "social characteristics translates into network distance, the number of relationships through which a piece of information must travel to connect two individuals" (p. 416). This social characteristic also tends to be localized in social space. This leads to a quality that people have significant contact with others that are like themselves.

Status homophily "includes the major sociodemographic dimensions that stratify society-ascribed characteristics like race, ethnicity, sex, or age, and acquired characteristics like religion, education, occupation, or behavior patterns" (p. 419).

People with different genders, races, ethnicities, ages, class back-grounds, and educational attainment appear to have different qualities (McPherson, Smith-Lovin, & Cook, 2001, p. 415). "Since people generally only have significant contact with others like themselves, any quality tends to become localized in sociodemogrpahic space" (p. 415). It is reported that people are more likely to discuss important matters with someone of their own race, and only 8% "of adults with networks of size two or more mention having a person of another race with whom they discuss important matter with" (p. 420). This has important implications for academic advising. Academic advisors overwhelmingly draw upon logical approaches for making important decisions and upon cognitive approaches for initiating learning activities. While they may have mentally drawn relationships with things they perceive that they advisees need, these may not be readily obvious to others. Therefore, they need to take action to create an environment that is support of the

advisees and obvious to them. Knowles (1980)includes climate building as the first step in his model for the process of planning and operating programs for adult learners (p. 54). When this is combined with the concept of homophily, it suggests that academic advisors need to realize that such things as the decorations in the office, the way students are greeted when they come to the advising area, and the promotional materials for advising are designed are sending strong messages to advisees that have the potential to make them more open to the advising experience as well as make them more hostile to it. While the field cannot change the current demographic makeup of its members, it can prepare its members for dealing with the disparity between their socio-economic makeup and that of their diverse advisees.

Looking toward the future, academic advising centers and universities need to address the dire discrepancy of cultural diversity in their academic areas. Does each university try to hire cultural diverse employees? It is not just with academic advisors, but all areas of the institution should have role models in the field of diversity. “To be effective, advisors should be knowledgeable about their advisees’ racial and cultural backgrounds, aspects of the presented advising concern, and

the interaction between the two" (Priest & McPee, 2000, p. 112). Undergraduates, graduate students, and postdoctoral students must be able to envision themselves in the roles to which they aspire.

> The absence of diversity in so many departments and fields sends strong signals about the degree to which those fields value diversity. These arguments have both broad and deep implications. They apply to any higher education campus, but they are best engaged in each institution's specific context with a focus on its mission, purpose, and culture. (Smith, 2009, p. 14)

When one thinks about minorities, it is usually in such terms as sex, nationality, or religion. However, one must also think about the four generations that are going to school and working together. Hammill (2005) has named and listed the characteristics difference between the four generations on a Generation Time line chart. These generations are: Veterans, Baby Boomers, Generation X, and Generation Y.

Each of these generations has distinct attitudes, behaviors, expectations, and motivational habits. To understand how individuals in different generations act and react, advisor must first start with understanding themself by beginning to see where they fall on the "Generation Time line." Those who are at the beginning or the end of a time

period, might have tendencies from both generations. Hammill (2005) has described each generation:

Those in the Veteran's generation were born between 1922-1945. In their work ethic they are hardworking, respect authority, put duty before fun, and adhere to rules. Work is an obligation. Their leadership style is directive, command-and-control. Their interactive style is individual. Their written communications is a memo, and verbal communications is formal. For feedback and rewards, no news means good news, and satisfaction on a job well done is their reward. They are motivated by having their experience respected. For work and family life, the "Ne'er the twain shall meet" (Hammill, 2005 p. 5).

Those in the Baby Boomer's generation were born between 1946-1964. They are workaholics, work efficiently, seek crusading causes, seek personal fulfillment, desire quality, and question authority in their work ethics. Work to a Baby Boomer is an exciting adventure while they prefer a leadership style that is consensual and collegial. Their interactive style is that they love to have meetings and they are a team player. They prefer communications to be in person. They do not appreciate feedback. Rewards should be in the form of monetary and title recognition. They are

motivated by being valued and needed. There is no balance with work and family; they live to work.

Those in Generation X were born between 1965 and 1980. Their work ethic is to eliminate the task, to be self-reliance, and to have structure and direction. They are very skeptical. Work is a difficult challenged for the Generation X; it is a contract. They are an entrepreneur when it comes to interactive style. They like communications that is direct and immediate. They will ask how they are doing when it comes to feedback. Rewards to them is freedom. They are motivated by message that indicate they do it their own way and forget the rules. Work and family life is a balance.

Those in Generation Y were born between 1981 and 2000. Their work ethic is to multitask. They will ask what is next, and they value tolerance and goal orientation. Work is a means to a end to reach their fulfillment. Their interactive style is participation, and they prefer communications by e-mail and voice mail. Feedback and meaningful work is their rewards. They are motivated by working with other bright, creative people. Work and family life are a balance.

Those in the Millennium Generation were born between 1977 and 1997. Even though this generation was not listed on

Hammil's chart, it is noteworthy because it overlaps with Hammil's Generation X and Y. In higher education, the millennium generation is mentioned more than Generation X and Y (Hunter & Kendall, 2008, pp. 145-146). This generation is important to education since this is the generation that has always had computers and cell phones in their world.

The Millennium Generation students in higher education except rapid turnaround on admissions decisions, financial aid awards, transfer for credit evaluations, and advising assignments (Black, 2007). According to the National Center for Education Statistics (2006), over 56% of Fall enrollment in grant-degree institutions are students from the Millennium Generation.

Not only do advisors need to know about the generational gaps of their advisees, NACADA needs to know this information for training purposes at conferences, workshops, and training. Each of these generations has distinct characteristics related to attitudes, behaviors, expectations, habits, and motivational strengths and weaknesses. To help advisors address the cultural diversity related to these generational difference, NACADA could be providing training related to the characteristics of the various generations and related to self-assessment so that

advisors can better understand themselves.

As the professional development mechanism for the field, NACADA is in a position to teach advisors how to be culturally aware of themselves, their advisees, and their co-workers. Although, NACADA is the leader in teaching and guiding the profession of academic advising, it is not encouraging that NACADA currently has a blank page on the NACADA website under cultural awareness for the section titled "Some thoughts on Diversity within NACADA."

Competent multicultural advisement can play a major role in developing all students' abilities to be successful in a multicultural world. Advisement and communication scholars recommend that academic advisors be fully informed about the academic and extracurricular opportunities that can broaden students' multicultural exposure and perspective. To partially achieve this, CALL could be administered to new advisors and to their advisees so that both could have a starting point in understanding their cultural awareness for themselves and for those with whom they interact.

Cognitive Processes

Although titles and roles my differ such as academic advisor, faculty advisor or administrator in higher

education, all have the opportunity for teaching and learning that is important to the student's higher education just as is the things offered through the traditional classroom. Through advisement, advisors have the opportunity to provide an arena for teaching skills in communication, decision making, metacognition and problem solving.

Metacognition

Metacognition is "knowing about and directing one's own thinking and learning process" (Conti, 2009, p. 888). In academic advising, advisors use developmental advising to coach students for self-monitoring of their cognitive progress, or metacognition. Metacognition is vital part of students' education if they are to succeed in their educational goals and life goals.

Developmental Advising

Developmental advising has been described in several different ways, but all point out that it involves teaching, learning, and decision making. In describing developmental advising, Crookston (1972) was the first to note that Academic Advising is a form of teaching.

> Academic advising is concerned not only with a specific personal or vocational decision but also with facilitating the student's rational processes, environmental and interpersonal interactions, behavioral awareness, and problem-

> solving, decision-making, and evaluation skills. Not only are these advising functions but...they are essentially teaching functions as well. (p. 5)

Academic advisors have the tools and knowledge to teach their advisees to be self-reliant and to have metacognition skills through developmental advising. All of the elements that Crookston encourages an advisor to facilitate can be accomplished through the four instruments that were used in this research: General-Decision Making Styles (GDMS), Attitudes Toward Thinking and Learning Survey (ATTLS), Assessing the Learning Strategies of AdultS (ATLAS), and Cultural Appreciation in Lifelong Learning (CALL). One or more of these instruments can be used by the advisor to help teach their advisees how to raise their metacognitive level related to rational processes, environmental and interpersonal interactions, behavioral awareness, and problem-solving and decision-making skills. All of these instruments deals with cognitive processes. After using them to identify and describe their own cognitive processes, the advisor could use them with advisees. Equipped with this metacognitive knowledge, developmental advising would come easily to the advisor.

Additional Research

Research will always be a part of academic advising,

because academic advising is an intricate part of higher education. "If advising is to claim what many believe to be its rightful centrality in the institution, it is imperative that the field of academic advising undertakes an aggressive research agenda" (Grits, Gordon, & Habley, 2008, p. 457).

This aggressive research agenda should include elements of cognitive style for both the academic advisor and their advisees. Several articles in the field's books, magazines, and NACADA have called for action in cognitive style areas. Some stress the need for decision-making skills:

> Teaching and modeling decision making, encouraging intellectual curiosity and critical thinking, and generating enthusiasm for life-long learning is, and always has been, part of the developmental advising approach. Academic Advising can and should integrate many theories, frameworks, and concepts into its practice. (Grites & Gordon, 2000, p. 14)

Others included cultural competence:

> The three most crucial areas to develop to become an effective advisor for all students, especially students with special needs, are coalition-building across campus, relationship-building with individual advisees, and cultural competence in terms of understanding our own intercultural awareness. (Harding, 2008, p. 202)

Others stress that assessment tools be used to help, students objectively raise self-awareness in these areas:

> Clearly, academic advisors are well positioned to measure student learning outcomes as part of the

> advising process. As part of their commitment to students, they must use assessment tools to help students have the most robust collegiate experience possible. Anything less will shortchange their most important stakeholders, students themselves. (Schuh, 2008, p. 366)

This research can be viewed as a part of this aggressive researchers agenda. The goal of this research was to describe the cognitive styles of the professional in the in four dimensions of cognitive styles. Because the sample of this study was representative of the NACADA population, its finding can serve as a baseline for training and future research in these areas of cognitive styles. Additional research should be conducted to validate these results with the same instruments and with similar instruments. Other dimensions of cognitive style such as learning style, and field depending, and convergent-divergent thinking should be included. Once training session are conducted that are based on these findings, then sessions should be examined with both formative and summative evaluations to uncover their effectiveness with the advisor. Finally, this line of inquiry should be extended to students so that their strengths and challenges can be identified and then related to those of the advisor. The findings from these types of research can be used in the metacognition process of making

both academic advisors and advisees aware of their cognitive styles. The goal of this research is to help the academic advisors become more effective in their ultimate goal of helping their advisees be more successful in school and in life.

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APPENDIX

General Decision-Making Styles

Directions: Listed below are statements describing how individuals go about making **important** decisions. Please indicate the extent to which you agree or disagree with each statement.

Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
1	2	3	4	5

1. I plan my important decisions carefully.	1 2 3 4 5
2. I double-check my information sources to be sure I have the right facts before making decisions.	1 2 3 4 5
3. I make decisions in a logical and systematic way.	1 2 3 4 5
4. My decision making requires careful thought.	1 2 3 4 5
5. When making a decision, I consider various options in terms of a specific goal.	1 2 3 4 5
6. When making decisions, I rely upon my instincts.	1 2 3 4 5
7. When I make decisions, I tend to rely on my intuition.	1 2 3 4 5
8. I generally make decisions which feel right to me.	1 2 3 4 5
9. When I make a decision, it is more important for me to feel the decision is right than to have a rational reason for it.	1 2 3 4 5
10. When I make a decision, I trust my inner feelings and reactions.	1 2 3 4 5
11. I often need the assistance of other people when making important decisions.	1 2 3 4 5
12. I rarely make important decisions without consulting other people.	1 2 3 4 5
13. If I have the support of others, it is easier for me to make important decisions.	1 2 3 4 5
14. I use the advice of other people in making my important decisions.	1 2 3 4 5
15. I like to have someone to steer me in the right direction when I am faced with important decisions.	1 2 3 4 5

16. I avoid making important decisions until the pressure is on.	1 2 3 4 5
17. I postpone decision making whenever possible.	1 2 3 4 5
18. I often procrastinate when it comes to making important decisions.	1 2 3 4 5
19. I generally make important decisions at the last minute.	1 2 3 4 5
20. I put off making many decisions because thinking about them makes me uneasy.	1 2 3 4 5
21. I generally make snap decisions.	1 2 3 4 5
22. I often make decisions on the spur of the moment.	1 2 3 4 5
23. I make quick decisions.	1 2 3 4 5
24. I often make impulsive decisions.	1 2 3 4 5
25. When making decisions, I do what seems natural at the moment.	1 2 3 4 5

Attitudes Toward Thinking and Learning Survey

Directions: Indicate your level of agreement with the following on the 7-point scale. You do not need to dwell on each statement; give the first response that comes to your mind.

Strongly Disagree	Somewhat Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Somewhat Agree	Strongly Agree
1	2	3	4	5	6	7

1. When I encounter people whose opinions seem alien to me, I make a deliberate effort to "extend" myself into that person, to try to see how they could have those opinions.	1 2 3 4 5 6 7
2. I can obtain insight into opinions that differ from mine through empathy.	1 2 3 4 5 6 7
3. I tend to put myself in other people's shoes when discussing controversial issues, to see why they think the way they do.	1 2 3 4 5 6 7
4. I'm more likely to try to understand someone else's opinion than to try to evaluate it.	1 2 3 4 5 6 7
5. I try to think with people instead of against them.	1 2 3 4 5 6 7
6. I feel that the best way for me to achieve my own identity is to interact with a variety of other people.	1 2 3 4 5 6 7
7. I always am interested in knowing why people say and believe the things they do.	1 2 3 4 5 6 7
8. I enjoy hearing the opinions of people who come from backgrounds different from mine-it helps me understand how the same things can be seen in such different ways.	1 2 3 4 5 6 7
9. The most important part of my education has been learning to understand people who are very different from me.	1 2 3 4 5 6 7
10. I like to understand where other people are "coming from," what experiences have led them to feel the way they do.	1 2 3 4 5 6 7
11. I like playing devil's advocate--arguing the opposite of what someone is saying.	1 2 3 4 5 6 7
12. It's important for me to remain as objective as possible when I analyze something.	1 2 3 4 5 6 7
13. In evaluating what someone says, I focus on the quality of their argument, not on the person who's presenting it.	1 2 3 4 5 6 7
14. I find that I can strengthen my own position through arguing with someone who disagrees with me.	1 2 3 4 5 6 7
15. One could call my way of analyzing things "putting them on trial," because of how careful I am to consider all of the evidence.	1 2 3 4 5 6 7
16. I often find myself arguing with the authors of books I read, trying to logically figure out why they're wrong.	1 2 3 4 5 6 7
17. I have certain criteria I use in evaluating arguments.	1 2 3 4 5 6 7

18. I try to point out weaknesses in other people's thinking to help them clarify their arguments.	1 2 3 4 5 6 7
19. I value the use of logic and reason over the incorporation of my own concerns when solving problems.	1 2 3 4 5 6 7
20. I spend time figuring out what's "wrong" with things; for example, I'll look for something in a literary interpretation that isn't argued well enough.	1 2 3 4 5 6 7

Assessing The Learning Strategies of AdultS

Directions: The following statements relate to learning in real-life situations in which you control the learning situation. These are situations that are not in a formal school. Instead, these are situations like learning things related to learning to operate a new computer program or learning for your professional development. For each statement, select the one answer that best fits you. Some of the items make look similar to you, so it is important that once you respond to an item, do not go back and change any items.

1. When considering a new learning activity such as learning a new craft, hobby, or skill for use in my personal life:
    ____a. I like to identify the best possible resources such as manuals, books, modern information sources, or experts for the learning project.
    ____b. I usually will not begin the learning activity until I am convinced that I will enjoy it enough to successfully finish it.

2. It is important for me to:
    ____a. Focus on the end result and then set up a plan with such things as schedules and deadlines for learning it.
    ____b. Think of a variety of ways of learning the material.

3. I like to:
    ____a. Involve other people who know about the topic in my learning activity.
    ____b. Structure the information to be learned to help remind me that I can successfully complete the learning activity.

4. I like to:
    ____a. Set up a plan for the best way to proceed with a specific learning task.
    ____b. Check out the resources that I am going to use to make sure that they are the best ones for the learning task.

5. I like to:
    ____a. Involve other people who know about the topic in my learning activity.
    ____b. Determine the best way to proceed with a learning task by evaluating the results that I have already obtained during the learning task.

Cultural Appreciation in Lifelong Learning

Directions: Read each sentence stem, and select the response that best fits you. Once you respond to an item, do not go back and change any items.

1. In our society:
    ____a. Inherent forces such as oppression and racial discrimination are firmly rooted in the social structure.
    ____b. Individual actions rather than inherent social forces determine people's social situation.

2. I believe that:
    ____a. Mainstream traditional values of the social structure limit multicultural groups.
    ____b. Mainstream traditional values offer some usefulness to multicultural groups.

3. I feel that:
    ____a. My knowledge of cultural issues is somewhat limited.
    ____b. Too much attention has been directed toward multicultural or minority issues.

Date:	Thursday, December 11, 2008
IRB Application No	ED08178
Proposal Title:	Learning Strategy Preferences, Decision-Making Styles, Ways of Knowing, and Cultural Awareness of Members of the National Academic Advising Association
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 12/10/2009

Principal Investigator(s):

Donna Trout
1112 S 221 W Ave
Sand Springs, OK 74063

Gary J Conti
1193 N. Lakeview Dr.
Sand Springs, OK 74063

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

[X] The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Shelia Kennison, Chair
Institutional Review Board

VITA

Donna K. Trout

Candidate for the Degree of
Doctor of Education

Dissertation: LEARNING STRATEGY PREFERENCES, DECISION-MAKING STYLES, WAYS OF KNOWING, AND CULTURAL AWARENESS OF MEMBERS OF THE NATIONAL ACADEMIC ADVISING ASSOCIATION

Major Field: Occupational and Adult Education

Education: Master in Human Relations in Organizational Development and Counseling from The University of Oklahoma, Tulsa, Oklahoma, in May 1998; Bachelor of Business Administration in Marketing from Northeastern State University Tulsa, Oklahoma, in May 1995; Associate of Science in Business Administration from Tulsa Community College, Tulsa, Oklahoma, in May 1994.

Experience: Northeastern State University, 1995 to Present, as Graduate Program Coordinator, Advisement and Career Services Specialist, and Coordinator of Student Services.

Professional Memberships: Oklahoma Academic Advising Association (1996 to Present), Representative (1996 to 1998), Membership Chairperson (1997 to 2000); National Academic Advising Association (1996 to Present), Co-Chair NACADA South Regional Conference (1999).